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CONSTRUCTION, EQUIPMENT, AND TESTS OF FLOATING DRYDOCK "DEWEY"

VOL. II: No. 7.

MANILA AND SHANGHAI, DECEMBER, 1905.

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# THE FAR-EASTERN REVIEW



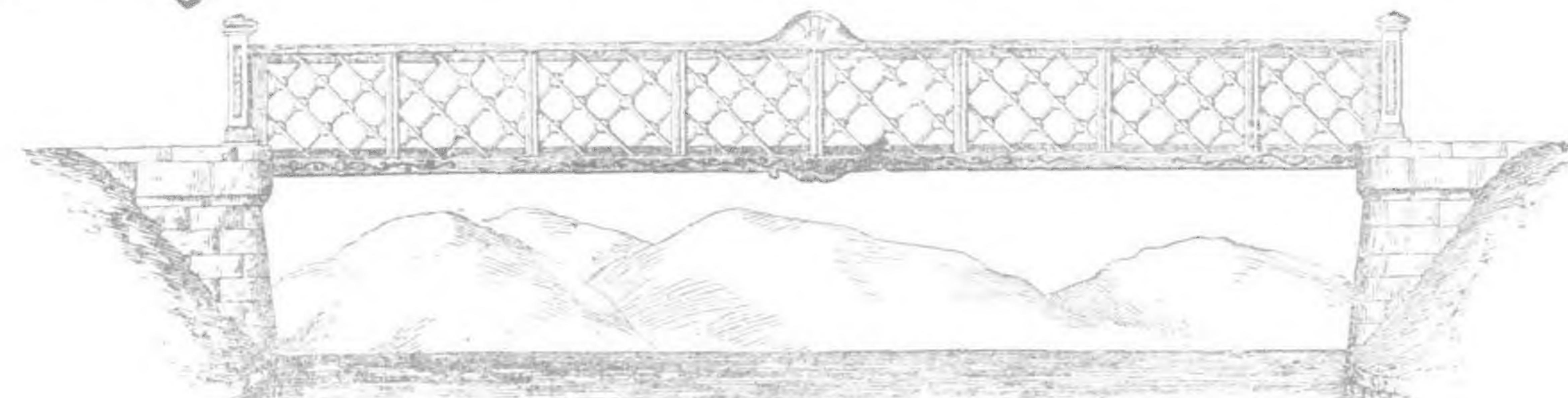
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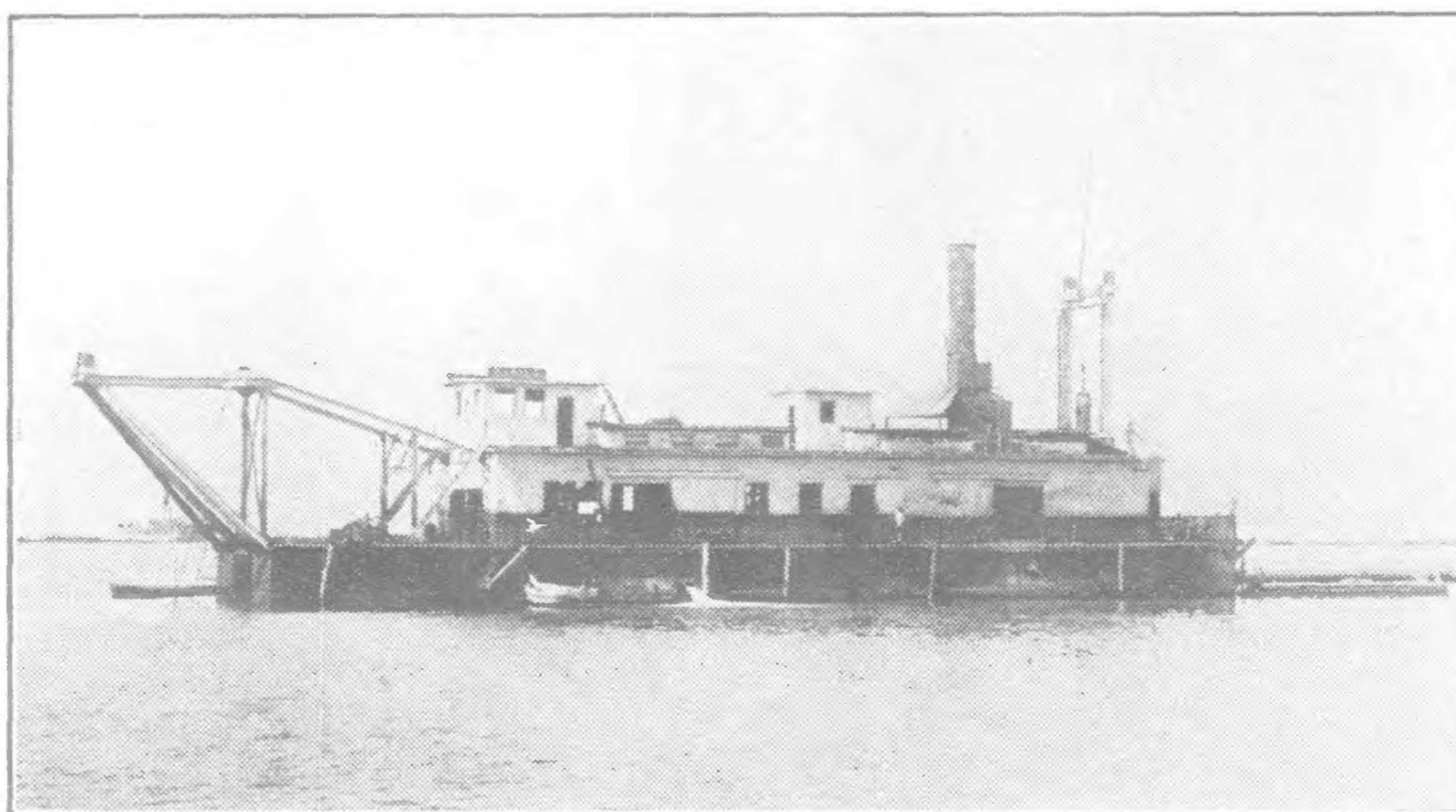
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# THE FAR EASTERN REVIEW

COMMERCE

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VOL. II.

MANILA, P. I., AND SHANGHAI, DECEMBER, 1905.

No. 7.

## CONSTRUCTION, EQUIPMENT, AND TESTS OF THE FLOATING DRYDOCK "DEWEY"

For the purpose of providing docking facilities in the Philippine Islands, which should be capable of caring for any ship of the American Navy either now in these waters or to reach them in future, the United States Government, according to a copyrighted article in the October number of *Marine Engineering*, under an act of congress approved July 1st, 1902, called for proposals to be received by the Bureau of Yards and Docks in the Navy Department, and opened March 14th, 1903. Under these proposals that of the Maryland Steel Company, of Sparrow's Point, Maryland, having been found to be the most satisfactory in every way, was adopted, and contract accordingly entered into with the company April 20th, 1903, for the construction and equipment of the dock. The contract was the more readily awarded to the Maryland Steel Company because of the fact that it had previously had a very successful experience in this line of work in the construc-

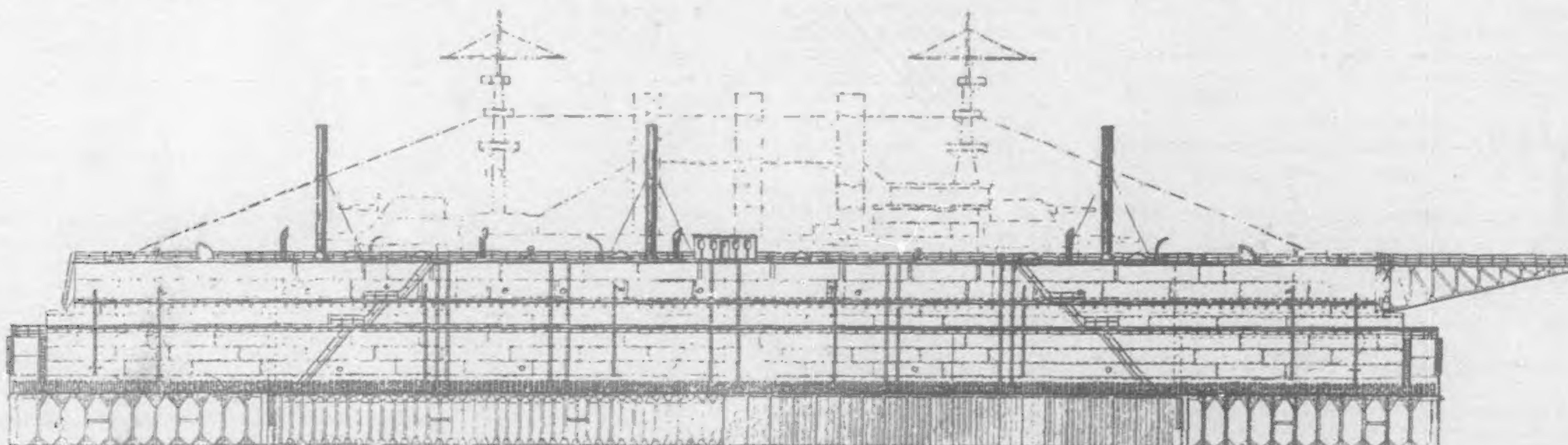
It shall be designed to take all classes of vessels of the United States Navy, either centrally or with the central line of the keel 1 ft. off the center line of the dock. It shall be so designed that the entire weight of a battleship may be safely carried by the main keel blocks, or one-half the weight on each side of docking keel blocks, and the side walls shall be designed to take shoring at any point which may be necessary.

No portion of the dock or its connections shall have a stress of more than 10,000 lbs. per sq. in. in self-docking, with a wind pressure of 30 lbs. per sq. ft. of exposed surface. The working deck of the dock shall be flush-plated and so strengthened that the docking keel blocks may be placed in any position, and the dock shall be so designed that the specified unit stress shall not be exceeded when the dock is pumped uniformly from all compartments to a freeboard of 2 ft. Under this latter

side walls above the engine decks as are not occupied by machinery shall be fitted as store rooms, and as quarters for officers and crew, with suitable mess arrangements. An electric-light plant shall be installed, and a blower system for ventilation of all working and storage places and quarters.

The dock shall be designed to lift a load of 16,000 gross tons with a draft of 30 ft. clear of the water in a period of 4 hrs., the pumps being required to operate readily under a head of 35 ft.

The structural steel for the dock was required to have a maximum tensile strength of from 55,000 to 65,000 lbs. per sq. in., an elastic limit of not less than one-half the maximum tensile strength, and an elongation of not less than 23 per cent in 8 ins. It was required to bend cold 180 degs. around a bar of diameter equal to thickness of plate, and to bend at a red heat 180 degs. flat, all without rupture on



INBOARD PROFILE OF FLOATING DOCK DEWEY, WITH A BATTLESHIP OF GEORGIA CLASS ON THE BLOCKS.

tion of the large dock owned by the American Government and now in operation at Algiers, La., opposite the city of New Orleans. The specifications issued by the Government contained the following general requirements:

**CONTRACT REQUIREMENTS.**—The dock in general shall be an open-hearth steel structure, so designed and arranged as to be readily self-docking without the aid of divers or of auxiliary constructions. It shall be self-contained as to operating machinery, and capable of being towed safely from place to place without auxiliary bracing. It shall be of the general type, composed of watertight side walls, and body or pontoons with a general U-shaped cross section, and divided into a sufficient number of watertight compartments to give great stability, there being not less than 6 transversely.

The dock shall be not less than 500 ft. long over all outside of bracket platforms. It shall have a clear width between fenders of not less than 100 ft. The decks of the side walls shall have not less than 8 ft. of clear height above the water with 30 ft. draft over 4 ft. keel blocks. The dock shall have a lifting capacity of not less than 16,000 gross tons uniformly distributed over its entire length, with the main deck not less than 2 ft. above the water, and with not less than 1 ft. of water in the compartments.

condition the longitudinal and lateral deflection over the entire working deck of the dock shall not exceed 1 in 2,000. Within the limits of allowed deflection the ship-load shall be assumed to be perfectly flexible.

The decks of the side walls shall have a clear passage fore and aft of not less than 5 ft. in width, with a handrail on the outboard side, and passage shall be provided from one side wall to the other, as well as telephone or speaking-tube communication between the two side walls, along the walls, and with the engine room.

When self-docking, all under-water portions shall be raised to a clear height of not less than 5 ft. for ready accessibility for inspection, painting, and repairs. The dock shall be operated by steam power and fitted with all the necessary boilers, engines, pumps, feed-water heaters, steam separators, and other auxiliaries desirable to make a first-class self-contained plant. This plant shall be of not less than 600 h. p., with all boilers and engines suitably distributed to give the best results. A small machine shop, suitable for light repairs to the dock, shall be installed in one side wall. Storage shall be provided for fuel and fresh water sufficient for two complete successive dockings of the maximum load. Such portions of the

outside of bent portion. Similar requirements were made for rivet steel but with tensile strength of only 47,000 to 55,000 lbs. per sq. in., and for steel castings whose strength should be upward of 60,000 lbs. per sq. in. The required tensile strength of wrought iron used was not less than 48,000 lbs. per sq. in., and all cast iron 18,000 lbs.

**STRUCTURAL FEATURES OF THE DOCK.**—The design as worked out from these specifications gives a dock of a total length of 500 ft., in 3 sections, of which the center has a length of 316 ft., and the end sections each 90 ft., with a 2-ft. open space between the center section and each of the others. The pontoons for the 3 sections are similar in transverse dimensions, the width being 134 ft. over all and the depth 18 ft. 6 ins. throughout. This width of 134 ft. is the extreme width over the side walls of the center section, whereas the end sections have a maximum width over side walls of 156 ft. with free space between them 139 ft. This allows for the center section being raised by the 2 end sections, and floated within their compass for any repairs or painting which might be found necessary, and this satisfies, so far as the center section is concerned,

(Continued on page 170.)

# THE FAR EASTERN REVIEW

GEO. BRONSON REA, M. E.  
PUBLISHER AND EDITOR

## COMMERCE :: ENGINEERING :: FINANCE

A MONTHLY REVIEW OF FAR EASTERN TRADE, FINANCE, AND ENGINEERING. DEDICATED TO THE INDUSTRIAL DEVELOPMENT AND ADVANCEMENT OF TRADE IN THE PHILIPPINES AND FAR EASTERN COUNTRIES.

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MANILA AND SHANGHAI, DECEMBER, 1905

### THAT CANTON-HANKOW TREACHERY

In a recent issue *The South China Morning Post* pays a high compliment editorially to THE FAR EASTERN REVIEW for the frank manner in which it laid bare the perfidy of the Morgan clique in their manipulation of the Canton-Hankow Railway concession, which led to the final loss of this important enterprise to the Americans and practically destroyed our prestige in China, as well as our commercial integrity. While we sincerely thank *The South China Morning Post* for its generous estimate of our broadness of views in dealing with treacherous attempt to plunder the Chinese, with the help of the Belgians, we do not feel that honesty towards ourselves and justice to American interests in China could have permitted us to take any stand other than the one we did. And this is not all. In our editorial last month we simply skinned over this development nostrum and gave only meagre

details of the outrage. We are now prepared to write down more elaborate facts about the manipulation of the Canton-Hankow concession, which, while they may not be pleasant reading for those financial operators who attempted to play the two-handed game of "draw" against the Chinese and American interests in China, with the Belgians, give us a whole lot of satisfaction in telling. We are not inclined to blame the Belgians for the part they took in the deal, because the avowed policy of the Belgians in the Far East is imperialism. They just took advantage of another opportunity offered to extend their political and commercial influence over China. We believe the New York manipulators are wholly to blame.

With the transferring of the Canton-Hankow Railway, with all its valuable concessions, to the Chinese officials and British financial control, the last act has been rung down upon the operations of the American-China Development Company in China. To say that this act has weakened American prestige in the Far East would be putting it very mildly, and the agitation which preceded this step in a way was probably one of the causes of the present boycott against Americans and American products. This statement is made advisedly, because of the intense agitation upon the subject and the bitter feeling engendered towards the American concessionaries for their treachery in transferring the stock of the company to other foreigners when it was expressly forbidden in the concession. This agitation started early in 1904 by the very student classes who have urged on the boycott and the result of which was the final transfer of all franchises back to the Chinese. It will therefore be of interest to the public in general, particularly to the Americans, to know the true causes which led up to this loss to the United States in the Orient of the most important concession ever given to the Washington Government and the citizens of the homeland by any foreign government.

The preliminary concession was obtained April 14th, 1898, by A. W. Bash, who was in the employ of the late United States Senator Calvin S. Brice, of Ohio, the prime mover of the project, after many years of constant labor. The American-China Development Company was then organized with a capital stock of \$600,000 gold divided into 6,000 shares of \$100 each, to take up the concession. William Barclay Parsons was appointed chief engineer in 1898 and sent to China to make a preliminary survey of the main line between Hankow, Province of Hupeh, and Canton, Province of Kwangtung. This survey was finished early in 1899 and the report published in November of the same year.

In the meantime Senator Brice died, and his demise caused a great deal of discouragement among the stockholders of the American-China Development Company and most of them lost faith in the enterprise. The company was like a ship without a rudder, and it was at this time that the Belgians bought up many shares through the medium of the New York banking house of J. P. Morgan & Co. A reorganization took place, upon the completion of which it was found that 4,000 of the shares were in the hands of the Belgians. This fact, however, was not generally known at the time.

An American engineer-in-chief was then appointed, and he went to China early in 1902 to permanently locate and construct the line. Actual construction was begun in March, 1903, and was stopped in October, 1904. During this time 10 ms. of double track and 20 ms. of single track, practically 40 ms. of line, were completed and put in operation, and the grading and bridges built for 12 ms. more, and the rails laid over half the line. With the additional expenditure of \$6,000 gold more these 12 ms. would have been put in operation.

The main agreement was executed April 14th, 1898, and a supplementary one July 13th, 1900. In the latter was a clause which prohibited the transfer to persons not Americans of any of the rights or privileges conveyed in the concession. Bonds were signed by authorized Chinese officials to the amount of \$40,000,000 gold and placed in the hands of a trust company

in New Jersey to be given to the American-China Development Company as it might need to sell them for construction purposes, and bonds to the value of \$6,000,000 gold were released to them in 1903. In the meantime the company borrowed \$3,000,000 gold with which to begin the construction of the road. Two million dollars of this loan were taken in Brussels and \$1,000,000 in New York, it is useless to state by whom.

After the issuance of the bonds the Belgian loan was changed to a hypothecation of a number of them equal to the loan while the New York loan remained unchanged, and the other \$4,000,000 in bonds were left with the trust company waiting for a stronger market.

Early in 1904 the Belgian stockholders became very much disgruntled with the American management of the company and demanded the resignation of the president and the engineer-in-chief. When this was accomplished they elected the same banker—name not necessary for identification—president who was their agent in purchasing the controlling interest from the American shareholders, and although no engineer-in-chief was appointed a Belgian engineer was sent out to China to control operations; also a Belgian chief accountant was put in charge of accounts. The Belgians apparently believed the time had come when it was no longer necessary for them to remain in the background, and in these various actions exposed the true condition of affairs.

The Chinese were quick to take advantage of the situation and directed the trust company to withhold the bonds, and, in October, the money available for construction work being exhausted, and no bonds available, work came to a stop. This was the beginning of the end, which culminated in the cancelling of the contracts by the Chinese and the payment of \$6,750,000 gold to the American-China Development Company, as purchase price of their property and indemnity for cancelling the concessions, which gives the company a net profit of \$3,000,000 gold.

As we stated editorially last month, the Chinese obtained this money as a loan from the Hongkong Government, giving as security for the loan the revenues of 3 provinces. Upon the payment of the money, the constructed portion of the line and the survey notes, together with all the rights and privileges held by the company, were transferred to the Chinese.

Here the first trouble developed among the Chinese and quarrels arose who was to take things over, no less than 15 officials appearing on the scene; not all, however, expecting to take charge. Chang Chi Tung, viceroy of the Provinces of Hupeh and Honan, who was the chief instigator of all the agitation to take the concession away from the American company and exploit it with Chinese capital, is at the head of the enterprise as it now stands. However, he is quite busy in trying to explain how it happened that he borrowed English money to pay off the Americans and Belgians. In the meantime British interests hold financial control, and indications are that they will continue so to do.

Another complication has arisen with the Belgians and French who have just completed the Lu Han or Hankow-Peking Railway. When the concession for the Canton-Hankow line was granted, a clause was inserted which gave the Hankow-Peking line to the American company in case the Belgians did not build it. This became known to the Belgians and they insisted that a similar clause be inserted in their concessions, *to wit*:—That if the American company did not build the Canton-Hankow line the concession should be transferred to the syndicate that was building the Hankow-Peking line. This clause was inserted and received the imperial sanction. As it fortunately happens for this company a large amount of French capital is in it, and after Chang Chi Tung's *coup de main* the matter was taken up by the French and Belgian ministers at Peking in the form of strong and vigorous protests, and they insist that the clause giving them the line be carried out. And now the viceroy of the "Two Hu's" will be quite busy explaining why he got his government into this mess. If he should be degraded he would not be the first

Chinese official who has lost his official head over these concessions. His Excellency Sheng Kung Pao, until recently director-general of all the Chinese railways, has been not only degraded but an estoppel has been put upon his entire property amounting to millions of taels.

But all these latest complications are another story. They are interesting as showing with what greed foreigners are clutching for railway concessions in China, only clinching our contention that the Morgan clique did American interests irreparable injury in the Far East—particularly in China—when it stooped to scoop in Belgian gold.

#### TIMBER INDUSTRY OF THE PHILIPPINES

During a most interesting and instructive conversation we had with Captain George P. Ahern, U. S. Army, chief of the Bureau of Forestry of the Philippines, that official expressed regret that the timbermen of the homeland are not giving more serious study to the possibilities which the investment of capital in the development of the forestry of the archipelago would insure. This lack of interest on the part of the timbermen seems to be the result of their almost total ignorance of concessions which have been made in the revision of the forestry laws of the Islands, rather than indifference of the wonderful wealth which the timberlands possess. The impression seems to prevail among the lumbermen of America that the forestry laws and regulations are impossible for large operations with modern machinery. While it may have been that hitherto there was sufficient ground for this conclusion, with the revision of the regulations the forestry situation has undergone a most satisfactory and encouraging modification in the interest of those who are masters of the industry. By way of explanation:

The aims of the Bureau of Forestry are the conservation and renewal of public forests, and, in addition, the securing and distribution of knowledge concerning their extent, composition and economic wealth. In order to facilitate their management, they have been divided into 10 forest districts, and, so far as possible, each district is placed in charge of an experienced forester.

The forest area of the Philippine Islands has never been carefully surveyed, but has been estimated to contain about 40,000,000 acres. At the present time these areas are being mapped, with the view of facilitating exploitation. Nearly all forest areas have their native names and are naturally bounded by rivers or mountain ridges, and to these areas the cuttings of licensees are assigned.

The class of timber licenses which are most numerous average in quantity granted from 15,000 to 20,000 cub. ft. and mature in 1 yr. Laws recently enacted enable larger concerns to obtain greater concessions, both in area to work over and in volume. Such concessions usually mature in 20 yrs. The forester in charge of his district, in addition to the duties of administering cuttings, makes studies of unexplored areas, so that the bureau is now in position to give information concerning any part of the Islands, and will assist the unacquainted in securing information desired, when of a forestal nature. It will be well or imperative that the prospective lumbermen gain an idea of conditions prior to entering the field, as considerable difference is experienced between these forests and those of the United States and in their exploitation. As is well known, the minor or secondary products of forests in general—and this is especially true of tropical regions—form a very important item. Force available has prevented the bureau from making but a start in investigations which will develop this branch, but much is expected and the field is extremely promising. Among others, we find numerous species of *beyucos* (rattan) suitable for almost every calling where this plant has been used, and it is in abundance everywhere; also gums, resins, etc.

A review of past lumbering in the Philippines shows it to have been crude and extremely wasteful, owing to lack of good methods and means of exploitation. Cutting was localized

to the extreme and resulted in clearings and extensive cogan lands, which are apparent today. At the present the bureau is experiencing a renaissance or transition from past crude methods to future up-to-date appliances. Even now most small operators are using primitive implements, and hauling is done by means of carabaos, but those who have introduced logging tools continue their use, and natives are quick in learning to operate them.

Of the numerous species composing the forests of the Philippine Islands, about 1000 are known and in the course of a year about 400 find their way to the Manila market. Many hard woods exist which are not cut, as felling and transportation means are not at hand. One licensee during the past year introduced saws for felling and working up, and utilized many hard species which were heretofore left. He expressed satisfaction with the work done and has proved the effectiveness of the saws in the hands of the natives. Various soft woods, which abound in the forests, are now consumed in match factories—an industry which is developing here very rapidly—and in making soles of shoes.

Trees of the same species vary considerably, according to the locality where grown. They differ in color, weight, and durability. The per cent of soundness in general is good, and very few species tend to be affected at maturity. When so affected, it is usually due to parasites such as *balete*, which is common to certain sections.

The development of lumbering is hampered by lack of up-to-date timbering apparatus and available means of transportation. We have ample supply and a fair market, which can be extended. These opposing features will be partly overcome, it seems certain, by the establishment of the proposed railway system which will offer outlets to forests heretofore untouched, and consume large quantities of timber in its construction. Transportation is now effected by means of rafts from points not further than 80 ms. from Manila, and by steamers and sailing vessels to more distant points. Timbers are usually hauled to the shipping point by carabaos, which are hired at P 0.80 to P 1 per day. The price of timbers on the beach depends largely on the distance to be hauled overland. In connection with this point, we find that *apitong* at Subic, near Manila, brings on the beach P 0.12 per cub. ft., while at Moron, some 20 ms. S., it is to be had at P 0.07 to P 0.08. *Apitong* is floated by means of a light species—*lauan*. Rafting seems to be the more profitable, and in this connection it might be well to explain that the activity of lumbering by smaller cutters depends largely on agricultural seasons, as during the rice-planting season labor is transferred to the rice fields. The price paid is usually P 0.50 to P 0.80 per day.

Various of the more promising timbers are being tested at the government's timber-testing laboratory, and several of the less known species are showing remarkably well. Concerning various timbers and their fitness for special uses, it would be impossible here to give a detailed account. We may say, however, that time has shown certain of them to be resistant to various elements, such as duration in fresh or salt water when used as piles; others as ties or posts in the ground, and to the *anay* or fungus attacks in the air. Of brilliant furniture timber there is an abundance, of many colors and grain.

The cost of sawing in Manila is from P 0.40 to P 2.50 per cub. ft., varying according to the different degrees of hardness. In general, woods are sawed more easily when fresh, as certain species contain a resinous deposit which hardens with seasoning. Rates of transportation of timber on sailing vessels from Unisan, Province of Tayabas (148 ms.), are P 0.24 to P 0.30 per cub. ft., and from Masbate, Island of Masbate (285 ms.), P 0.40 per cub. ft.

During 1904, 600,000 paving blocks—Australian blue gum—were purchased by the City of Manila and laid down here at P 0.80 per M. *Molave*, *dungon* and *ipil*, believed by the forestry experts to be superior, were offered at 3 times this price. All of which shows that it is due to lack of cheap and efficient means of transportation, exploitation and equipment for

working up the material that the industry lies dormant. Several cable systems for logging have been installed and are giving very satisfactory results, but what is needed most to give lumbering an impetus, now that the laws are liberal, are capital and machinery.

#### PHILIPPINE RUBBER INDUSTRY

Because rubber culture may become an important industry in American tropical possessions, it is announced that the government at Washington will send Professor Olsson-Seffer to the Philippines very soon to examine and report on the advantages these Islands offer for rubber production.

To prepare himself for doing his work thoroughly, the professor has been studying rubber culture as it has been carried on in Mexico. His headquarters there was at La Zacualpa, widely known as the oldest and perhaps the best of American rubber plantations. It is certainly successful in proving that rubber growing in plantations is profitable under good management, and the theory is advanced that if good results have been secured there from rubber planting, equally good may be obtained in the Philippines.

In this connection it is interesting to note the great strides the Island of Ceylon is taking in rubber growing. During the past season Ceylon shipped 100,000 lbs. of rubber, all produced from the island plantations. The shipment was in the form of biscuits of chemically pure rubber which brought in the market a better price than the finest Para rubber.

The growing of rubber has been going on for some time in Ceylon, merely as an experiment, until within the last 4 yrs. Since then 60,000 acres have been planted in the island, and an equal amount in the Straits Settlements, at the rate of 250 trees to the acre. The planting has been done in a systematic and scientific way, so that trees reach sufficient maturity to begin producing in 3 yrs., in exceptional cases, and in all cases in 6 yrs. It is estimated that during the present season 100,000 acres will be added to the rubber plantations of Ceylon, and a similar area to those of the Straits Settlements, giving these colonies a total of 320,000 acres, which, at 250 trees to the acre, represents no fewer than 80,000,000 rubber trees under cultivation. This surpasses anything heretofore attempted anywhere else in the world, for the 80,000,000 rubber trees of the Congo District include wild trees as well as those under cultivation. It is estimated that in 3 yrs., at the present rate, allowing for no extension of the rubber-cultivated area, Ceylon and the Straits Settlements will be in a position to supply with the finest rubber at present known in the world the immediate demands for rubber of any kind.

It is generally admitted that rubber can not be successfully grown at a greater altitude than 1500 ft. above sea-level, yet so keen is the boom at the present moment in the Island of Ceylon that planters and estate owners are setting rubber seeds all over their land, quite irrespective of its suitability. Some of the plantations reckoned in the figures given above are at no less altitude than nearly 5000 ft. It is probable, however, that they never will yield a satisfactory rubber in remunerative quantities.

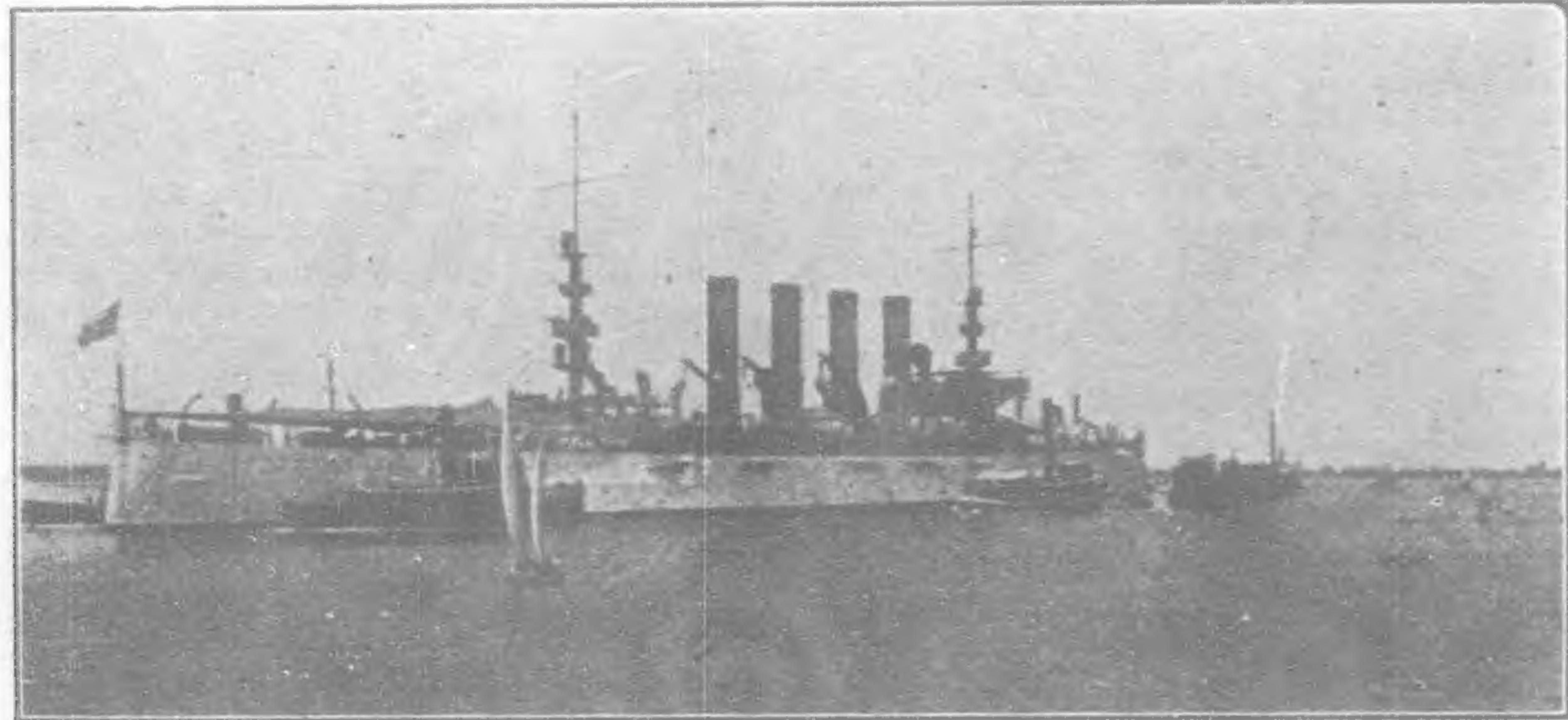
The profits of rubber-growing are enormous, and from \$200 to \$300 per acre is by no means an extravagant figure to reckon as the average in well-chosen localities, while \$1000 an acre for yearling trees have already been paid. In addition to the actual rubber product there is a large profit to be made from the sale of the seed at the present time, although this is only a temporary condition.

Investigation pursued to the present time by the Bureau of Forestry of the Philippine Islands shows that there are large areas of wild rubber trees growing in certain sections of these Islands. The quality of the rubber has been carefully tested and found to be superior. All that is required to place the industry on a firm and big-paying basis are money and cultivation. The commercial demand for rubber in the United States alone is great enough to warrant the prompt and energetic development of this industry.

**CONSTRUCTION, EQUIPMENT, AND TESTS OF THE FLOATING DRYDOCK "DEWEY"**

(Concluded from page 167.)

the requirements for self-docking. The end sections are docked by the center section by



ARMORED CRUISER COLORADO ENTERING THE DOCK.

being turned through a horizontal angle of 90 degs., and then floated in with their length of 90 ft. between the side walls of the center section, which has a free space between fenders of 100 ft. and a total space between walls of 106 ft. The length of the center section is seen to be sufficient to take in both end sections at once, with a clearance of 4 ft. between them. The total height of the dock structure is 63 ft. 8 ins., of which 42 ft. 2 ins. represent the height of the side walls above the main deck. The end pontoons are considerably lower than this, having a height above the dock of only 20 ft., which gives a total height for these sections of 38 ft. 6 ins.

As required by the specifications, the dock is divided throughout its length into 6 watertight compartments by 5 longitudinal bulkheads, of which 1 is located in the center, 1 on each side of the center and at a distance of 22 ft. from it, and 1 immediately under the inside wall of the side walls of the dock. By means of transverse bulkheads numbering 5 in the center portions and 2 in each of the other the entire dock is divided into 72 separate watertight compartments, of which 36 are in the central portion and 18 in each end section. In addition to the transverse watertight bulkheads are other transverse bulkheads subdividing the dock into cellular structure and spaced 8 ft. apart fore and aft. These are all fitted with large manholes and limber holes to facilitate the free passage of water within the watertight cellular subdivisions.

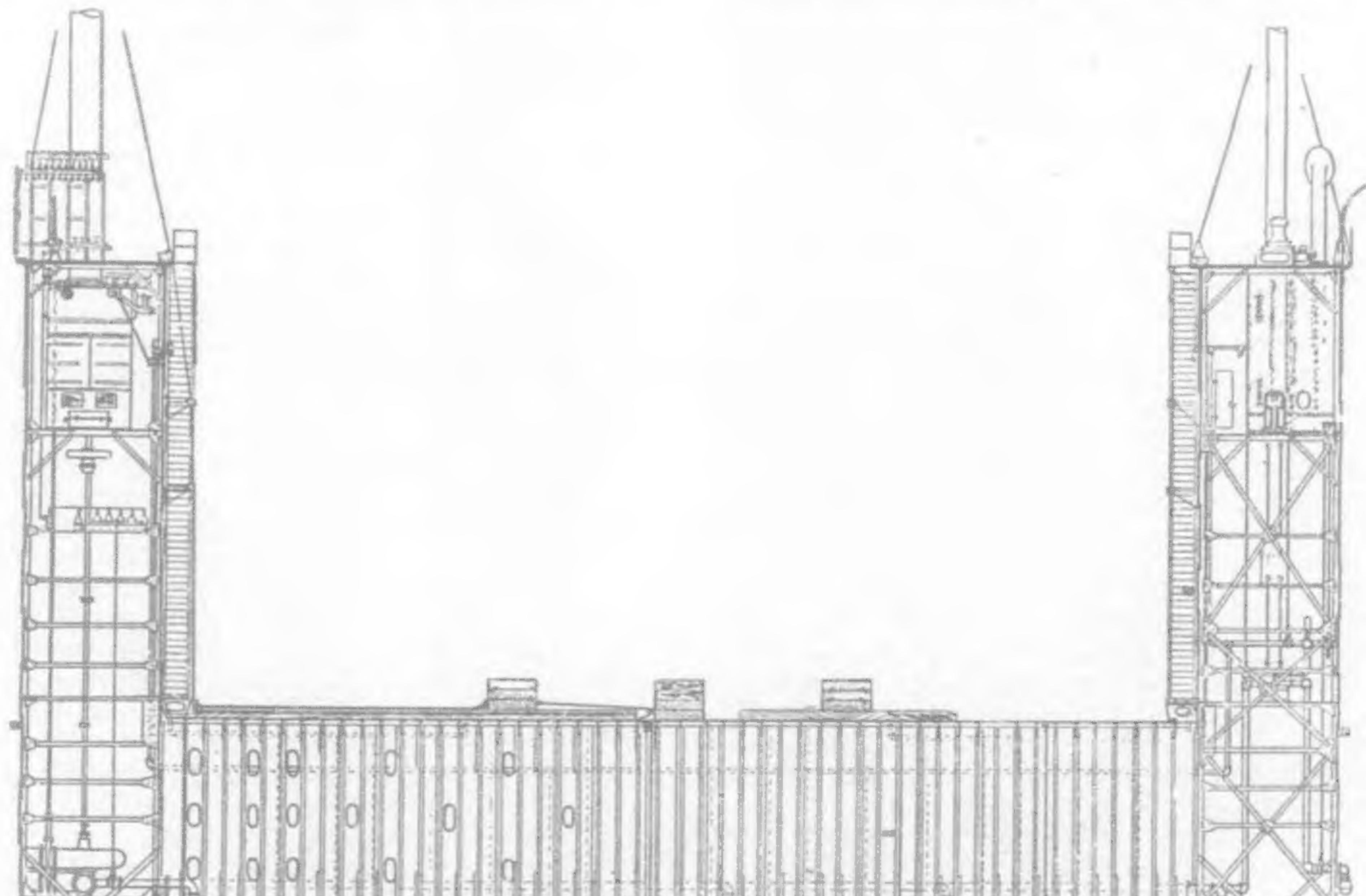
The frame spacing throughout the dock is 24 ins. center to center, the frames consisting in 6-in. by 3½-in. by 7/8-in. angles for the

vertical and bottom members of longitudinal girders, while the top members consist in each size of channel bars which measure from the central frames 15 ins. by 32 lbs. and for the side frames 12 ins. by 25 lbs. These members are all connected in the corners by the usual

diagonal braces of 4½-in. by 3-in. by 7/8-in. angle bars as well as with plate gussets. In

introduction at intervals of horizontal struts. The transverse bulkheads are 7/16 in. thick and are attached to both bottom plating and the deck by means of double angle bars and to the side walls by single angle bars. The central longitudinal bulkhead is of the same scantling as the transverse bulkhead and is fitted intercostally between them. The other longitudinal bulkheads are of the same scantling as the central and are stiffened by 7-in. by 15.75 lb. channels spaced about 2 ft. apart. All the plating throughout the dock is so fitted as to cross the frames at right angles. The bottom plating is, therefore, transverse between the side walls and longitudinal under them. Its thickness throughout is 24 lbs., except that under the side walls of the center pontoon, which is reduced to 22½ lbs. The middle strakes of the side-wall plating are 20 lbs. thick, which is increased towards the bottom to 22½ lbs. The upper 2 strakes in the center of the dock are doubled for the purpose of obtaining additional stiffness.

**STEAM PLANT.**—The steam plant required by the government specifications is actuated by steam generated in 3 Babcock & Wilcox boilers of the marine type, each boiler having a grate area of 46 sq. ft. with a heating surface of 1,750 sq. ft., thus giving a ratio of the latter to the former of 38 to 1. Steam is used mainly for the purpose of pumping, and for this there are 3 24-in. centrifugal pumps and 2 12-in. pumps of the same type. The latter are placed

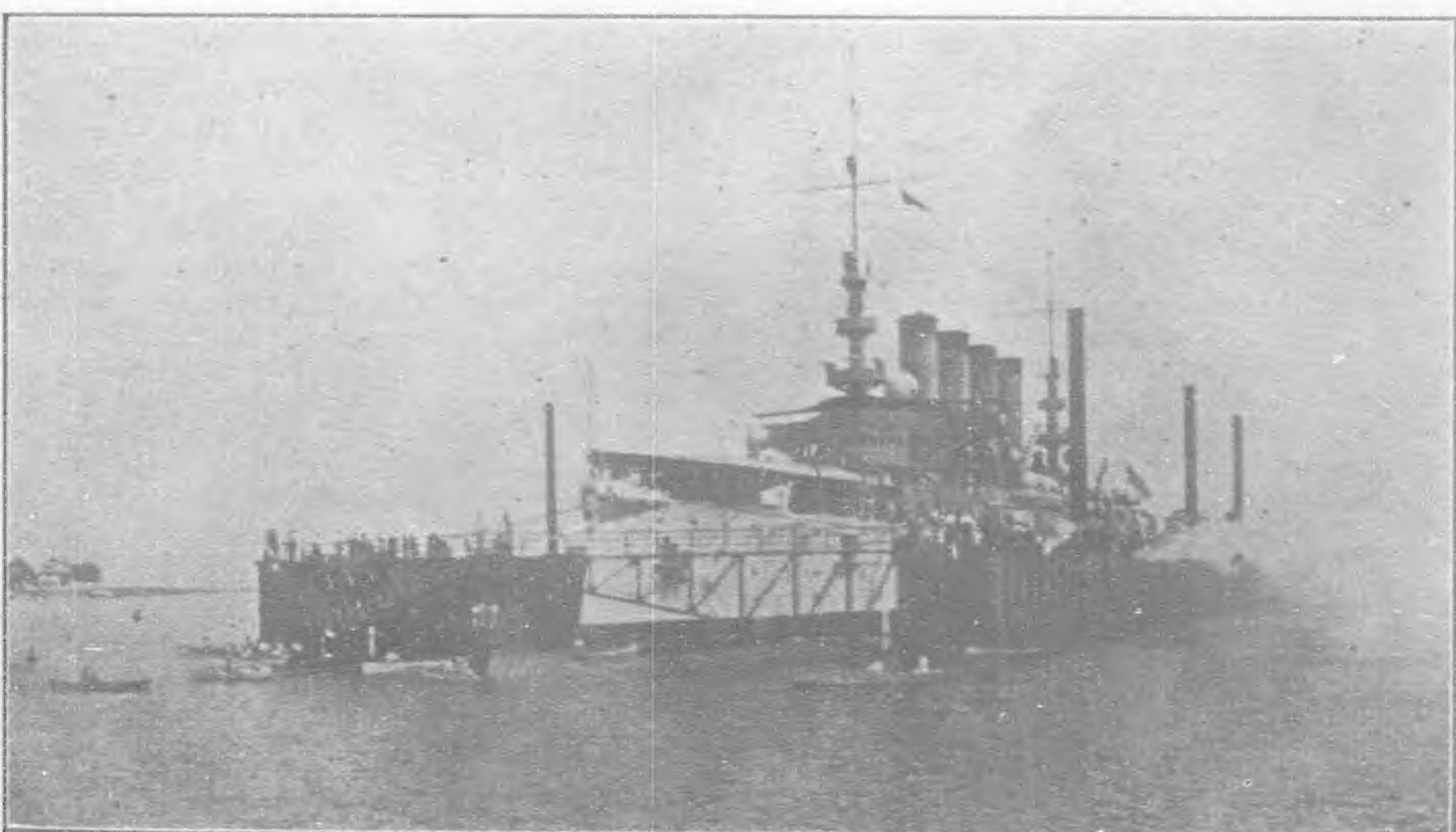


CROSS SECTION OF CENTRAL SECTION OF DOCK.

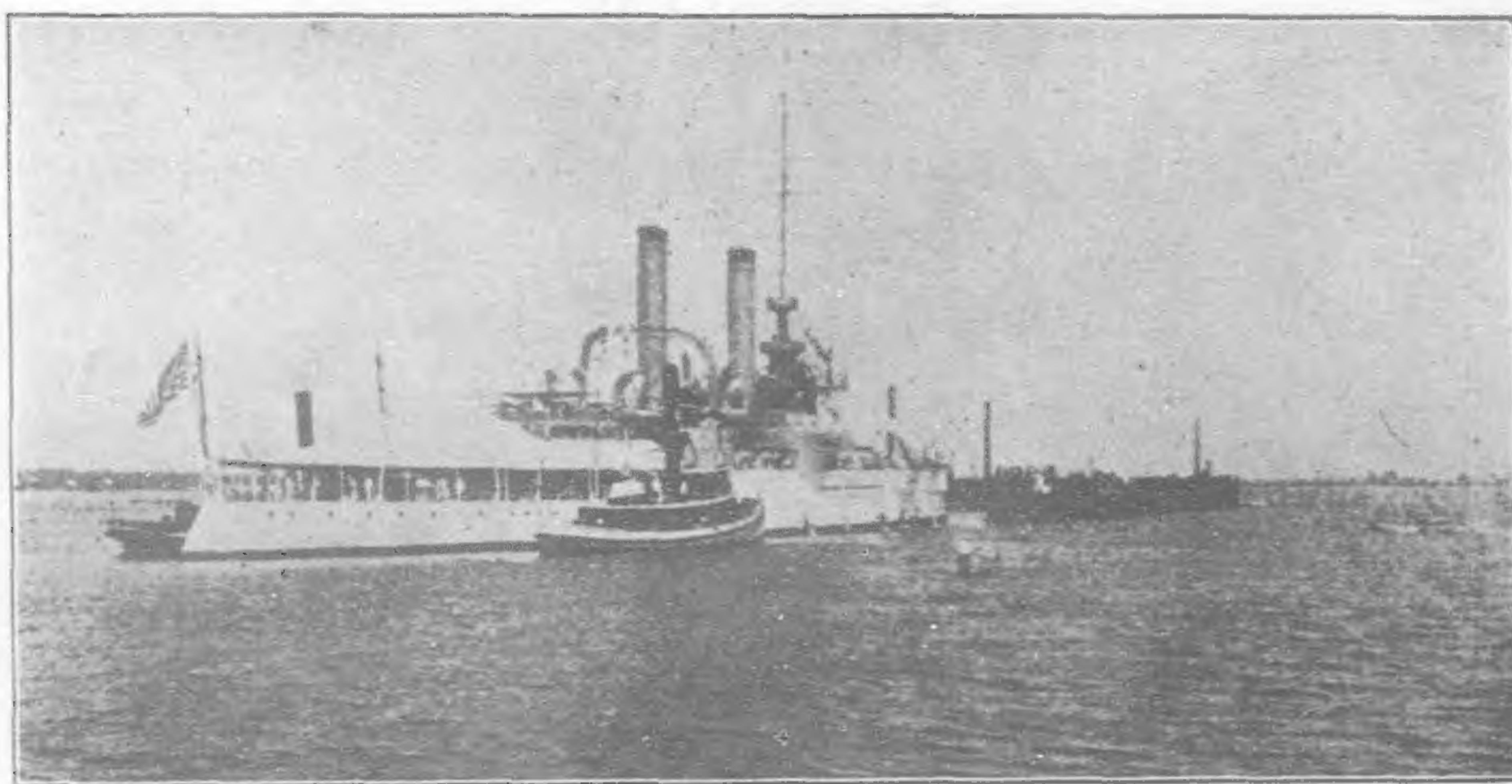
the side walls the frames are built in the same manner, but are rendered more stiff by the

in the end pontoons and are used only for self docking, while the larger pumps are used for the regular purpose for which the dock is designed. Each of the latter is operated by a horizontal compound engine having cylinders 14½ and 25 ins. in diameter respectively with a stroke of 14 ins. The cranks are at an angle of 135 degs. Each engine, with the regular steam pressure of 140 lbs. per sq. in., develops at a speed of 225 r. p. m. about 225 indicated h. p. The engines are placed far up in the wings and operate vertical shafts leading down to the pumps, which are very near the bottom of the side walls and which discharge outboard by means of horizontal pipes. The smaller pumps are each driven by simple engines with 12-in. cylinders and 10-in. stroke direct-connected to the pump shaft. The auxiliary machinery is operated by steam from a Babcock & Wilcox boiler with a grate surface of 18 sq. ft. and heating surface of 750 sq. ft., and consists in the main of a 7-kw. Sturtevant 110-volt generator driven by a simple direct-connected engine 6-in. by 6-in., and a distilling apparatus with a daily capacity of 2,500 galls.

**DESCRIPTION OF THE PUMPS.**—The 5 pumps were furnished by the Morris Machine Works, of Baldwinsville, N. Y., and they are placed in the bottom of the dock, with their suction openings directly on top of the main suction

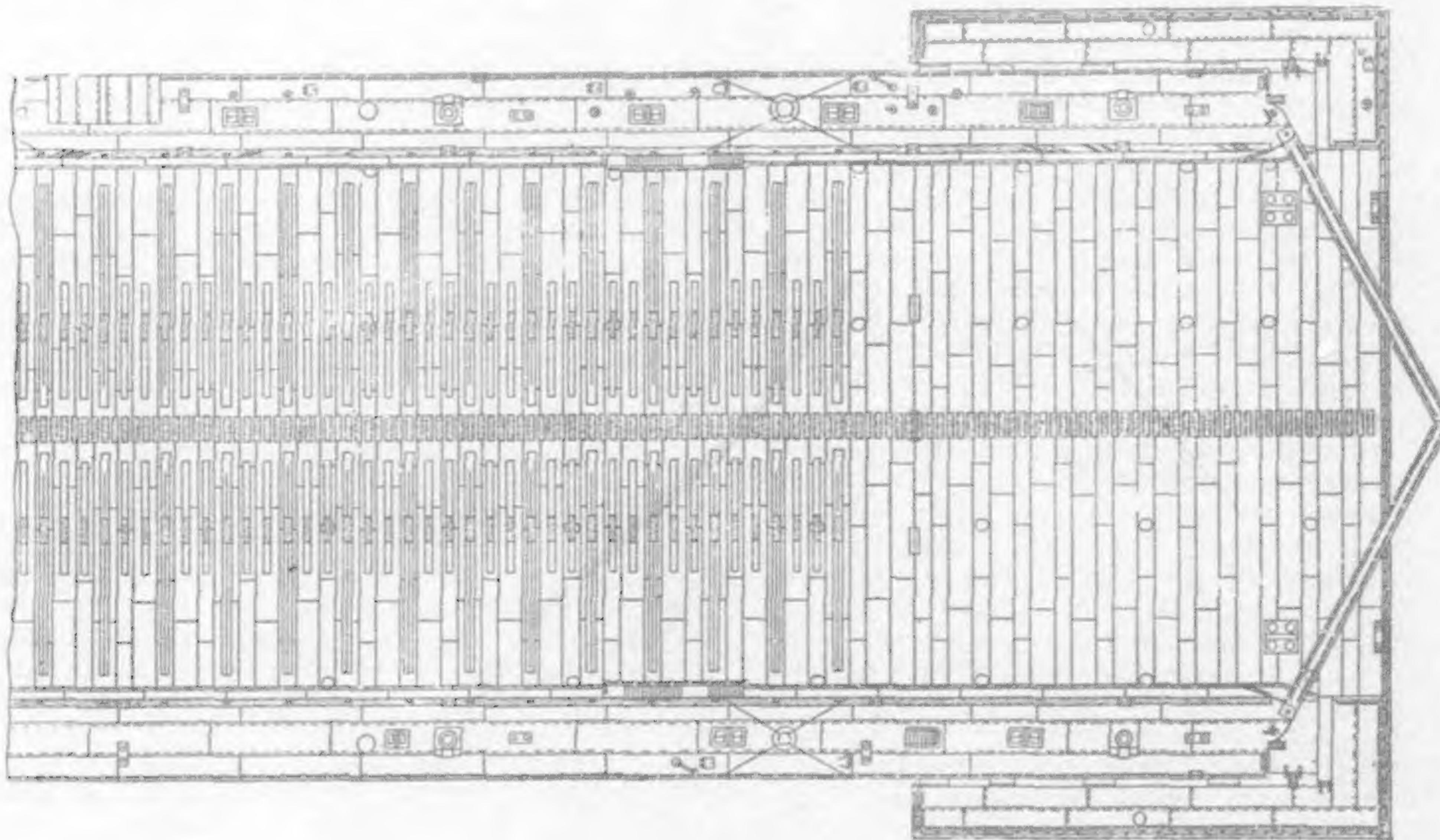


FLOATING DOCK DEWEY RAISING ARMORED CRUISER COLORADO.

BATTLESHIP *IOWA* ENTERING SUBMERGED DOCK.

pipe running the full length of the dock; while the driving engines are placed on an upper deck on the side wall of the dock, and are directly connected to the pumps by a vertical shafting of 5-in. diameter. This is well shown in the illustration, which is one of the compound

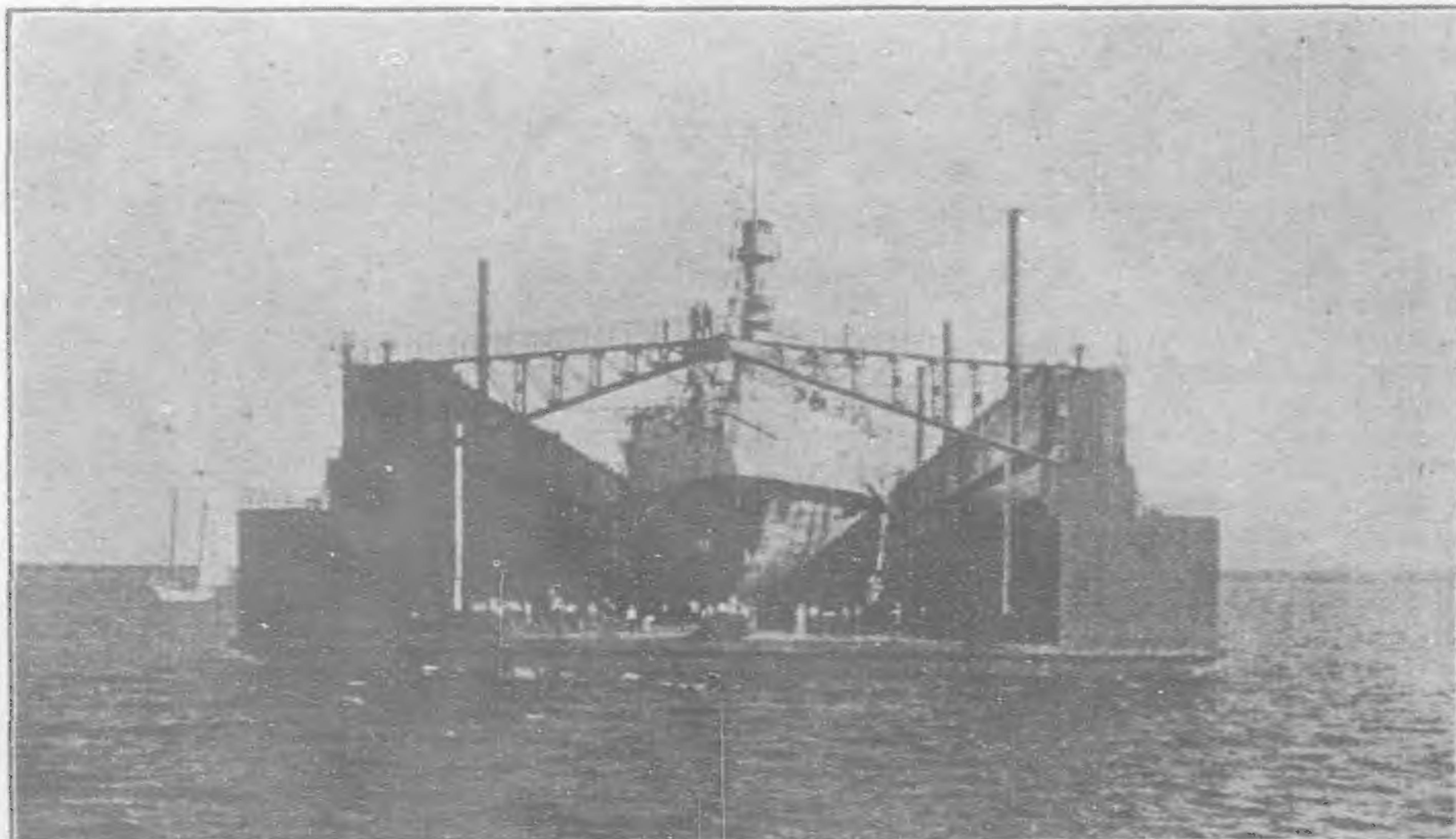
The 24-in. pumps are of solid-shell type, and are made of cast iron of very heavy proportions, each one fitted with a bronze runner of the shrouded type 54 ins. in diameter. As they are worked on vertical shafts it is important that the thrust bearing be relieved in operation



HALF-LENGTH PLAN OF DOCK, SHOWING HINGED FRONT BRIDGE.

engines operating a 24-in. pump. The crank shaft is 2-throw with the crank opposite, and the cylinders at an angle of 135 degs. The crank pins are 7½ ins. in diameter and 7 ins. long while the bearing section of the shaft has a diameter of 7 ins.

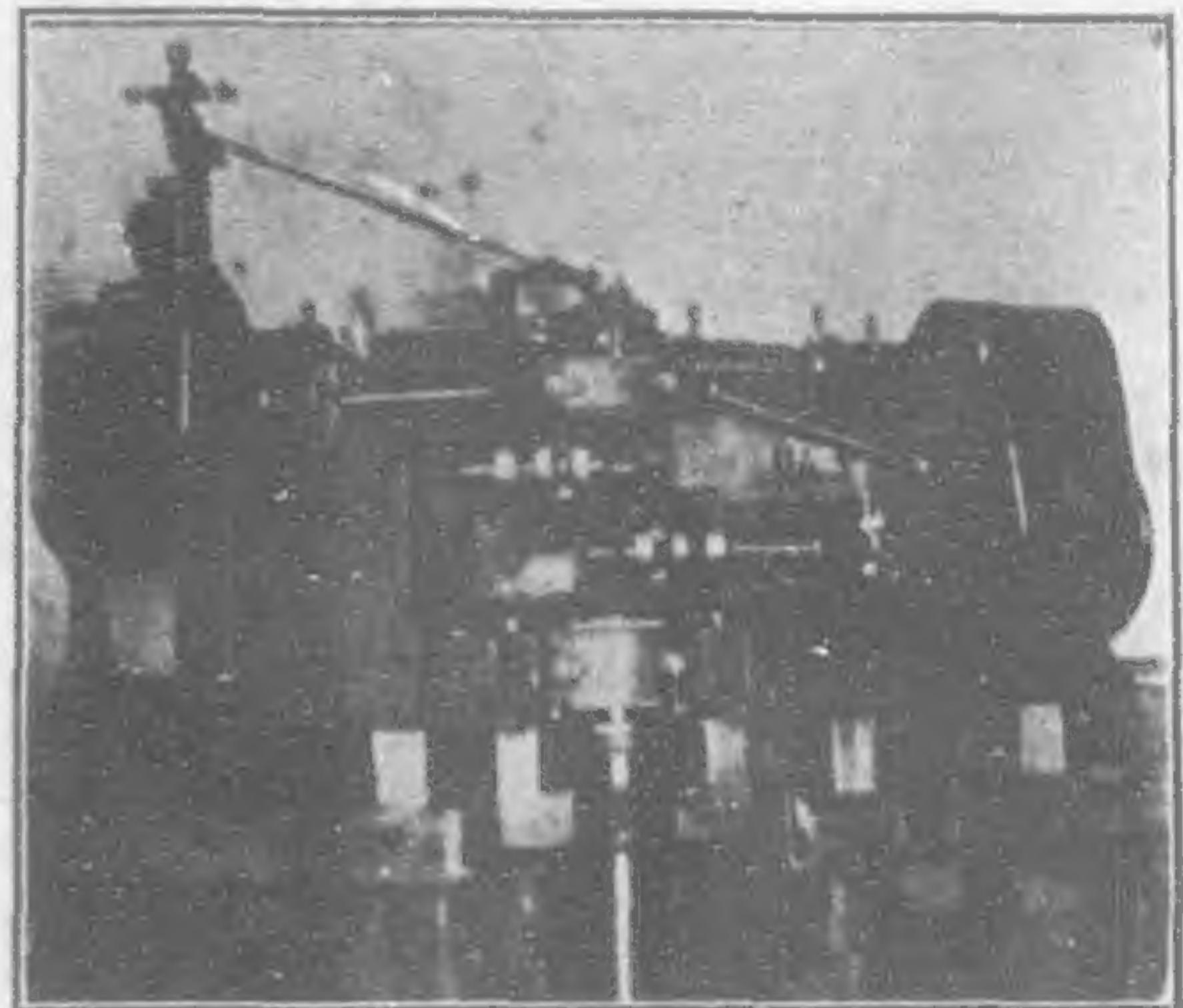
of as much pressure as possible. They have, therefore, been designed so that the water exerts an upward pressure on the runner or impeller. The weight of the crank shaft line shafting and impeller is carried by a ball thrust bearing hung directly under the engine framing.

END VIEW OF DOCK, WITH BATTLESHIP *IOWA* ON THE BLOCKS.

This is composed of 2 rows of 1½-in. steel balls.

The 12-in. pumps are of the same general construction and have impellers of a diameter of 40 ins. Both types are fitted with throttling governors operated by gearing, so that in case the pumps should lose their priming the engines would be prevented from racing.

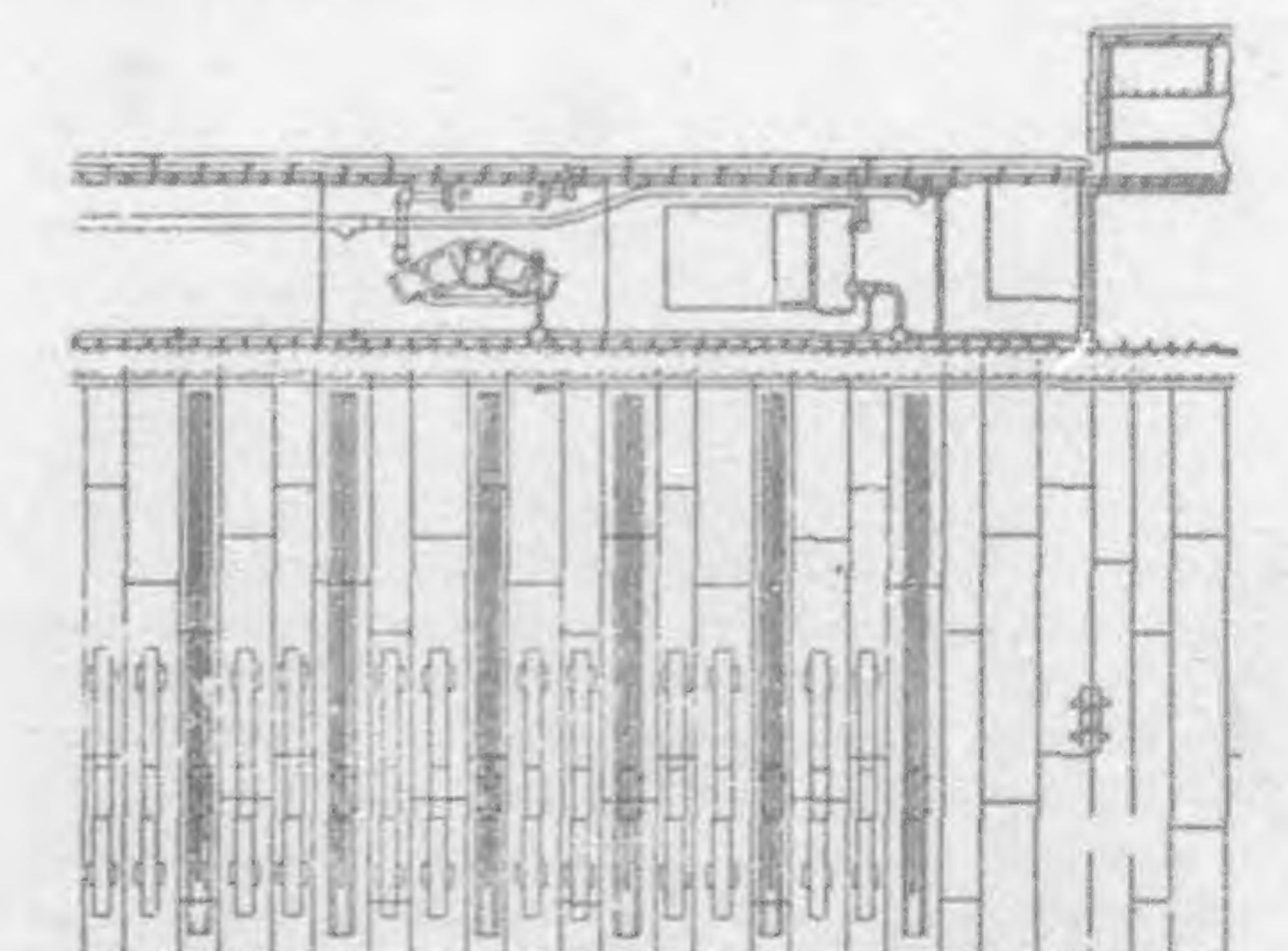
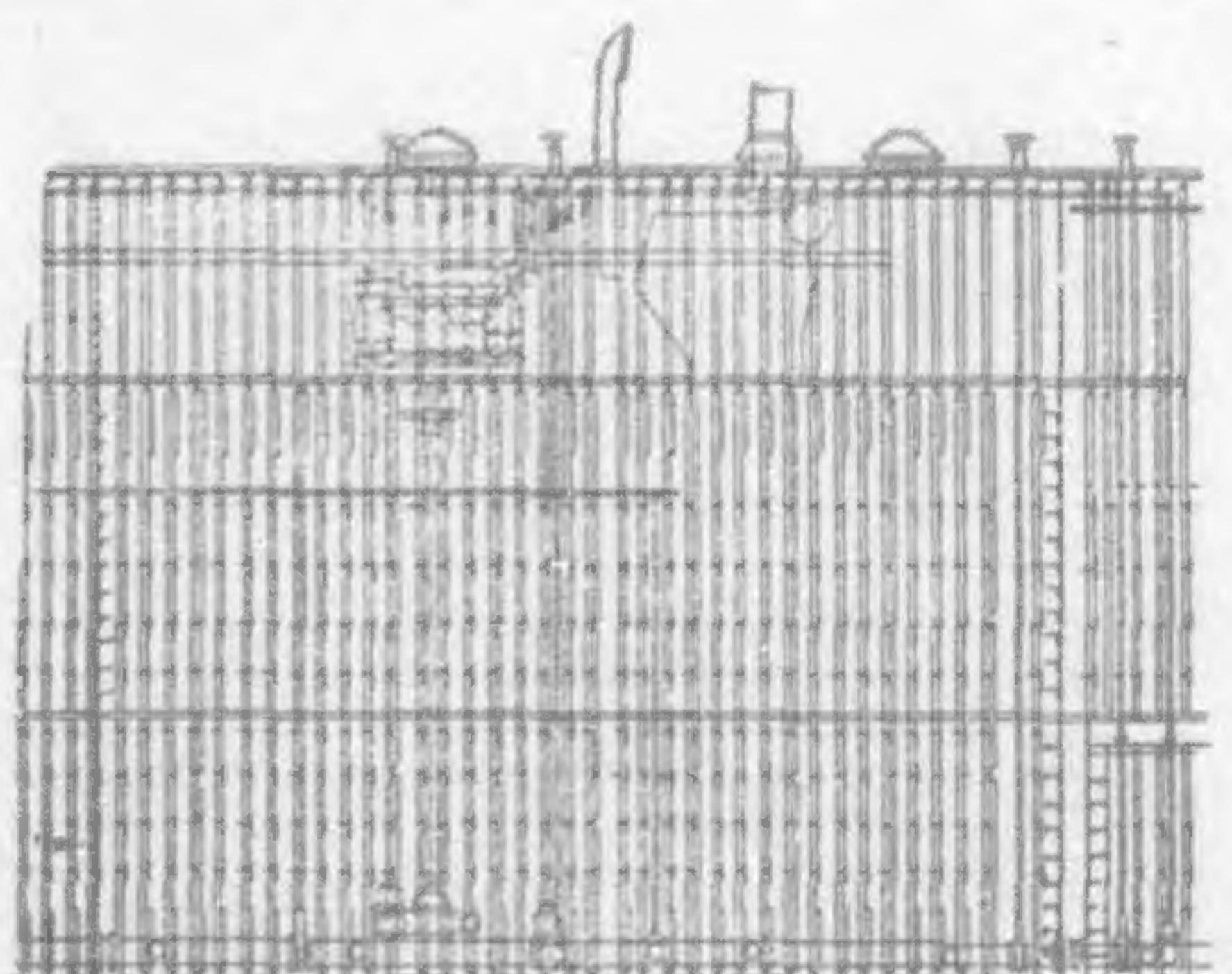
**COMPARISON OF THE DOCK.**—This dock is found by a comparison with other existing structures to be considerably the largest of any dock yet built. The requirements, according to government specifications, call for a capacity to lift 16,000 tons with a freeboard of 2 ft. As an actual fact, it is found possible with this freeboard to lift 18,500 gross tons; and a little calculation establishes the fact that



ONE OF THE PUMPING ENGINES.

with a freeboard of 1 ft. the lifting capacity of the dock is 20,400 tons, and, with the main deck awash, the lifting capacity is 22,300 tons. The comparison with other docks shows that the 18,500-ton lifting capacity with a freeboard of 2 ft. is 1,000 tons greater than that of the Algiers dock built by the Maryland Steel Company, as before mentioned; and other large docks may be listed as follows:

The Bermuda dock, built in England and now a part of the equipment of the British Naval Station in the Bermuda Islands, has a lifting capacity of 16,500 tons; the Austrian dock at Pola is rated at 15,000 tons; the German



INBOARD PROFILE AND HALF-PLAN, SHOWING PUMPING MACHINERY

dock at Stettin has a capacity of 11,000 tons; and the Pensacola dock, owned by the American Government, but which was formerly owned

by Spain and was a part of the naval equipment at the port of Havana, Cuba, has a capacity of 10,000 tons.

**COST OF DOCK AND ITS ACCOMMODATIONS.**—*Dewey*, according to the original contract, was to have cost \$1,124,000 gold, but certain modifications and additions crept in during construction, and the ultimate cost somewhat exceeds this figure. The steel used in construction amounts to about 11,000 tons, which is held in place by more than 2,000,000 rivets. This great weight, added to the lifting capacity of the deck, represents a total displacement of about 30,000 tons at a draft of 16 ft. 6. ins., but it is plain that for the dock to exercise its legitimate functions, a depth of water of above 50 ft. will be required in order that a ship drawing 30 ft. of water can float over the keel blocks while the dock is submerged. At light draft the dock draws only 6½ ft.

The accommodations on *Dewey* are designed for 9 officers and 12 men, with staterooms and mess hall, a well-appointed galley, and a finely-equipped library.

The dock was constructed under the immediate supervision of Mr. Leonard M. Cox, C. E., U. S. Navy, working in conjunction with Mr. S. Anderson, superintendent of the dock department of the Maryland Steel Company.

**SUCCESSFUL OFFICIAL TESTS.**—The first test of the finished dock was made by means of the armored cruiser *Colorado*, which had at the time a displacement of 13,300 tons distributed over a length of about 500 ft. The ship was lifted clear of the water in 2 hrs. 16 mins. A more severe test was that connected with the battleship *Iowa*, which had a displacement of 11,600 tons and a length on the keel blocks of about 330 ft. This ship was lifted clear of the water in 1 hr. 37 mins., but the pumping was continued until the dock had such a freeboard as to represent the raising of a 16,000-ton ship, which was accomplished in 2 hrs. 42 mins. altogether. In this latter case a deflection on the length of the dock was found amounting to 2 ins., which had increased at the expiration of 48 hrs. to 4 ins., but which in the bearing length of the ship did not exceed 1½ ins.

The self-docking test occupied about 15 days, but it is expected that this time will ultimately be reduced to 8 or 10 days, which will be a record for this operation.

**TRANSPORTATION TO THE PHILIPPINES.**—The dock was turned over to the Navy Department about October 1st, and arrangements are now being made for towing it to Olongapo, its ultimate destination. Just how the tow will be made or what route will be adopted has not yet been decided upon at Washington, but the general impression is that it will be brought over in sections and probably through the Suez Canal. It is expected that the process of towing the dock this distance of about 13,000 miles will require about 5 mos.

#### MUNICIPAL IMPROVEMENTS, MANILA

In a communication to *Engineering News*, published in New York City, J. F. Case, M. Am. Soc. C. E., Chief Engineer, Department of Sewer and Waterworks Construction, Manila, P. I., discusses municipal improvements in progress and projected for this city. As supplementary to what has appeared in THE FAR EASTERN REVIEW of recent months, descriptive of projected works, what Mr. Case has to say on the subject should be of additional interest to engineers:

The scheme of public improvements for the City of Manila comprises the expenditure of approximately \$6,000,000 within the next 4 yrs., and opens a field of interest to contractors in general. The largest items are for the construction of a new sewer system and a gravity water supply, proposals for which will be received in January next.

The financial condition of the city is rare and worthy of comment. With a population of nearly a quarter million, and with an assessed valuation of nearly \$45,000,000, the city has no indebtedness whatsoever, except that incurred by the sale of the first installment of the funds for the sewer and waterworks construction. The total issue authorized for this purpose is \$4,000,000, of which amount \$1,000,000 has

already been sold to provide funds for beginning the work. A premium of 10% was realized on those bonds.

The adopted plans for sewers provide for a separate system, and no provision has yet been made for storm water drainage. The plans, in general outline, provide for starting the sewers at their upper ends, as near the surface as possible, and obtaining the necessary grade by increasing the depth thereof until the economical limit is reached. The sewage is then raised by pumping and the process repeated until the main station is reached, whence all sewage is finally disposed of by pumping seaward into the bay. The total estimated cost is about \$2,000,000.

The plans for the water system provide for impounding the waters of the Mariquina River, a mountain stream, at a point some 16 ms. from Manila, and conveying the same by means of a steel riveted pipe and masonry conduit to the distributing reservoir in the environs of the city. The present distribution system will be utilized as far as possible, but large extensions will be necessary, though not at present under contract.

Aside from the sewer and water system there are at present under contract 3 bridges, aggregating in cost \$125,000, and three sections of the Pasig River wall, aggregating \$310,000.

In contemplation or preparation there is the improvement of the *esteros* or canals, whose ramifications extend throughout the city; the installation of a system of storm water drains; further construction of Pasig River walls, and a large amount of street construction and paving. The insular government will also receive bids early in the coming year for the construction of new steel wharves in the recently completed harbor.

Since the attention of contractors and material men may well be drawn to this field for enterprise, it is believed that a short description of conditions here may be of interest.

Climatically the year is divided into 2 seasons the dry, from December to May, and the wet, from June to November, both inclusive. During the dry months out-door work may be carried on without interruption, while the wet months will interfere more or less with work on low grounds, trenching, or control of streams. The average rainfall is about 75 ins. *per annum*, of which amount about 80% falls during the wet months. Out-door work, however, is not by any means suspended during these months, since precipitation is not constant and many days without rainfall of importance are interspersed.

As regards health, Manila need not be feared. The death rate among Americans and Europeans, is low and, excluding infant mortality, the total death rate is not excessive. The most important question to intending employers is that of labor, and some diversity of opinion exists and is expressed. The views herein set forth are those of the writer, deduced from more than seven years' experience with the native laborer, not only in Manila but also in the provinces.

The native is of less robust physique than the American, and is consequently less efficient. He is also satisfied with earnings only sufficient for his immediate needs, and therefore after pay day does not care to work until his money is expended. Left to himself, he is prone to carelessness in his food and may easily be either underfed or poorly nourished. On the other hand, he is tractable, quiet, and sober, and his daily wage averages less than half that of an American. The best results can be obtained by a sort of paternal supervision on the part of the employer, and this supervision must extend not only over the working hours but throughout the entire day. Attention to housing, feeding, sanitation and amusement will surely result in increased efficiency, cheerfulness and disposition to work, while small concessions made to those who complete the full number of working days per week will secure less unnecessary absences from work. As a rule, time books and pay rolls will show 25% more names of men employed than are actually at work on any given day, but a process of elimination will finally secure a very satisfactory working force. Patience, justice and instruction are indispensable and skilled supervision is a prime requisite. Each foreman must be able to instruct and excel in every

branch of the work under his charge. Skilled labor in the American acceptance of the term is somewhat scarce, but the native is imitative and quite adaptable. Machinists and artisans of more or less skill are numerous, and where it is possible to keep a man on one particular class of work he soon becomes fairly expert. During the building of the new harbor works Chinese and negro labor was tried, but in a comparatively short time was eliminated, for the native had proven himself more satisfactory and economical. This work comprised timber work, pile driving, quarrying, ship building, masonry and concrete work, iron and steel erection, dredging and kindred construction, and the natives proved themselves capable, not only in ordinary labor, but as stationary engineers, and in handling pneumatic tools, running derricks and other work which is considered as skilled. The installation of the new electric street railway system was accomplished satisfactorily with native labor entirely, and this included excavation, track laying, ballasting, concrete work, paving, installing machinery, and reinforced concrete building construction.

It is the belief of the writer, borne out by carefully kept cost tables, that the native laborer, properly treated and cared for, will compare favorably in economical results with foreign competitors.

Another point of interest to the contractor is the consideration of Manila as a supply and repair depot. The archipelago is open to the competition of the world and nearly every nation is represented in its trade. English, German, French, Swiss, and Spanish goods, as well as those from the United States, are on sale. Fair stocks of tools, implements, etc., are carried, but large orders for supplies are generally placed with agencies for importation. All governmental purchases are made by the insular agent. There are several fairly well equipped machine shops in the city, including foundries for brass and iron castings of ordinary size. Unusual tools for special work would need to be imported. Cements of various brands are either in stock or can be quickly secured. Both American and European brands are in use, but the local trade is generally supplied with that of Hongkong or Japanese manufacture. For transportation there are several teaming and trucking firms, supplied with American or Australian horses or mules and American wagons, carts and trucks. Probably 100 teams could be secured at a daily rate but little higher than is paid in the western part of the United States. Bar and flat iron is carried in stock, but rolled shapes, except in small sizes, would have to be imported. Two of the largest contracting firms in the United States are already established here, and both seem fully employed. There are also a number of firms and individuals who compete in works of less magnitude.

While these notes refer solely to the works in the City of Manila, attention might also be invited to a large amount of improvements contemplated by the insular government throughout the Islands, as well as to the general scheme of railroad construction now under advertisement.

#### CANTON-HONGKONG ICE AND COLD STORAGE COMPANY, LTD.

Another page of this issue of THE FAR EASTERN REVIEW shows the prospectus of the Canton-Hongkong Ice and Cold Storage Company, Ltd., which it is proposed to form with a capital of \$700,000 (70,000 shares at \$10 each), with the object of establishing in the City of Canton, China, an ice plant of 50 tons daily capacity and also 30,000 galls. of distilled water. The reasons presented in the prospectus suggest a splendid investment, and of these the most convincing argument in favor of the enterprise is that in a populous city, and with a large shipping business, there is no ice plant of any description to be found in the neighborhood. It is the hope of the promoters that the plant will be in operation about May 1st, 1906. Careful consideration of the proposition should convince interested parties of the merits of the company.

## THE GROWING COMMERCE OF THE PHILIPPINE ISLANDS

(By W. MORGAN SHUSTER, Insular Collector of Customs)

In his last official report the writer of this article had occasion to make the following statement with reference to the fiscal year 1905:

"While trade conditions and customs revenues have not been all that could have been hoped for, there is little cause, all things considered, for discouragement, and on the other hand there are many indications of gradual restoration to normal conditions."

Nothing recent has occurred to counsel a departure from that opinion. It is undeniable that the prevailing sentiment among business men, in Manila at least, is one akin to pessimism, but it is equally true that the reasons for their state of mind are not hard to find, and the cause being known, the remedy is sure to follow.

In order to arrive at any definite idea of the trade of the Philippine Islands, with a view to determining whether conditions are improving or not, it is necessary to analyze with some care the trade statistics of the last year and some previous period, so as to show not only the entire volume of trade, but also the different classes of commodities imported and exported.

It is important to ascertain what portion of the imports for the different periods comprise articles for immediate consumption and what portion thereof enters into improvements of permanent character, calculated to benefit the locality for years to come, by increasing the productive capacity and improving the health conditions of the community, as well as making the Islands more attractive and enjoyable for home seekers.

Careful investigation along the lines indicated has convinced the writer of the fact that conditions have materially improved, considered as a whole, and that the outlook for the future is bright.

This conviction is arrived at from a careful study of trade statistics in all their bearings.

The periods considered are the two fiscal years ended June 30th, 1904, and 1905, respectively.

It is true that by comparing the entire volume of trade, currency excluded, for the Philippine Islands for the fiscal year ended June 30th, 1905, with the previous fiscal year, a decrease is shown, amounting to \$212,465, but we should note that the exports of Philippine products show an increase amounting to \$2,089,738, while imports of commodities, exclusive of currency, show a decrease amounting to \$2,342,203, as illustrated by the following table:

FISCAL YEAR	1904	1905
Imports (value).....	\$ 33,221,251	\$ 30,879,048
Exports (value).....	30,226,127	32,355,865
Total trade value.....	\$ 63,447,378	\$ 63,234,913

It will be seen that for the fiscal year 1905 the total exports of Philippine products exceed the total imports of all commodities, currency excluded, by the sum of \$1,476,817, while for the previous fiscal year imports of commodities from foreign countries exceeded the value of exports of Philippine products by the sum of \$2,995,124. This is certainly a substantial gain in favor of the Islands, and its tendency is towards better economic conditions.

Furthermore, the decreases in imports have been along the line of articles for immediate consumption, such as food products, as well as in those articles commonly called luxuries.

In the one item of rice a decrease is shown for this last year amounting to \$4,092,076, the rice imports for the fiscal year 1904 being valued at \$11,548,814 invoice value (exclusive of imports by the Insular Government and military), and for the fiscal year 1905 at \$7,456,738. This reduction is attributable to the increased local crops, which have reduced the amount necessary to import, and all indications point to a steady decline in the importation of this article in the future. That this is a most cheering sign nobody will deny. The fact that the local rice crop in the past may have been allowed to diminish because there

was more profit in growing hemp does not detract from the present favorable indications—especially in view of the fact that this decided increase in the local rice crop is accompanied by an increase in the exports of hemp and sugar, and only a small decrease in the exports of copra and tobacco, while the total exports of local commodities have increased over \$2,000,000. View in any light, the increased rice crop and decreased rice importation for the past fiscal year is a most favorable sign for the future.

The other chief articles of import showing a decrease in the year 1905, as compared with the previous fiscal year, are malt liquors, wines, silks, woolen manufactures, musical instruments and breadstuffs, as is indicated by the following table:

FISCAL YEAR	1904 (Values)	1905 (Values)
Rice.....	\$ 11,548,814	\$ 7,456,738
Malt Liquors.....	310,411	278,732
Wines.....	266,663	193,088
Silks.....	546,040	480,721
Musical Instruments.....	51,760	39,694
Breadstuffs.....	1,096,323	979,935
Woolens.....	281,429	183,459
Total (seven articles).....	\$ 14,101,440	\$ 9,612,367
Total decrease in fiscal year 1905.....		\$ 4,489,073

Still other articles for immediate consumption, particularly in the line of food products have shown material decrease.

The articles showing substantially increased importations during the past year are, as before stated, chiefly of the class entering into permanent improvements, though cotton goods, which are worn here by all classes, also show a marked increase.

The following table gives the principal articles in which an increased importation is shown during the fiscal year ended June 30, 1905, compared with the previous fiscal year:

FISCAL YEAR	1904 (Values)	1905 (Values)
Cotton Textiles.....	\$ 4,962,354	\$ 6,429,873
Cars for Steam Rail-way.....	1,648	44,033
Cars for Other Rail-way.....	2,820	60,313
Lumber.....	349,451	430,949
Cement.....	140,252	236,495
Iron, Steel and Man-ufactures of.....	2,412,936	2,646,123
Illuminating Oil.....	485,435	792,897
Paper, and its Man-ufactures.....	490,806	515,061
Agricultural Mach-inery.....	9,892	65,671
Other Machinery.....	774,026	893,195
Total (ten articles).....	\$ 9,629,620	\$ 12,114,610
Total increase in ten articles.....		\$ 2,484,990

The statistics given above do not include any imports by the insular government or military, which, however, were very largely of the class of articles entering into public improvements of a permanent character, such as lumber, cement, and hardware.

Machinery importations embraced many traction engines, rice threshers, etc., to be used in improving roads and promoting agriculture. These facts point unmistakably to a more prosperous future for the Philippine Islands.

Government free entries, not included in the foregoing statistics, included during the fiscal year 1905—Cement, 10,436,186 lbs.; coal, 154,050 tons; rice, 3,615,558 lbs.; refined sugar, 1,826,408 lbs.; and of lumber and timber more than 2,000,000 ft., board measure.

Imports from the United States during the fiscal year 1905 aggregated \$5,839,512, as against \$4,843,207, during the previous year, thus showing an increase of more than \$1,000,000 in imports taken from the United States, in spite of the decline in the total volume of imports. Other countries naturally showed a corresponding loss in their import trade to these Islands.

The United States practically controls the trade in the line of wheat flour, petroleum, malt liquors, manufactures of paper, machinery and hardware, and compared with the trade of the previous year, the mainland territory has shown an increase of more than 100 per cent in the cotton goods trade. The United States has now risen to a point where it has nearly 20 per cent of the entire import trade of these Islands, and of the exports of Philippine products during the fiscal year 1905, amounting to \$32,355,865, the United States received \$15,678,875, or nearly one-half of the entire amount, showing a gain of more than \$4,000,000 over any previous year.

During the past year there has been considerable decline in the quantity of refined sugar imported, chiefly attributable to the reopening of the Luzon Sugar Refinery, in March of this year, this refinery, which is the only one in the Islands, having been closed for several years past. It is likely that there will be a continued decrease in the importation of refined sugar.

Of the chief articles of export from the Philippine Islands—hemp, sugar, copra and tobacco,—the two first named have shown considerable increase during the past fiscal year, as compared with the previous year, hemp increasing from \$21,794,960 in 1904 to \$22,146,241 in 1905; and sugar rising from \$2,668,507, in 1904, to \$4,977,026 in 1905. Copra and tobacco exports showed a slight decrease from those of the previous year. Refined sugar is imported chiefly from Hongkong and the Chinese Empire. Lumber imports come almost exclusively from Pacific Coast points. Woolen manufactures come chiefly from European countries, as do also about 60 per cent of the cotton goods. Fresh meats are imported almost exclusively from Australia.

The increase in trade with the United States has perhaps been one of the most noticeable features of the past year's statistics, and naturally calls for some readjustment in the business circles here.

With the extension of good roads and railroad communication throughout the principal Islands, and the improvement of coastwise shipping, further impetus will be given to the production of articles which are on the gain even under present conditions.

The extensive harbor improvements, which promise to place Manila among the best of the harbors of the Orient, are rapidly approaching completion, and when completed will certainly result in materially increased trade for this port, and will prove beneficial to the business interests of the Islands as a whole.

Thousands of new homes have already been built and the work of construction is progressing steadily and rapidly here and at other points in the Islands. This fact tends to increase confidence in the future of the Philippine Islands and to insure the permanency of satisfactory trade.

In the readjustment of trade growing out of changed conditions, it is possible that larger and more extensive business concerns will, to some extent, take the place of smaller ones thus causing complaint in individual cases, but in the main trade conditions will be brought closer to the modern standards of the larger cities, and the public generally will probably reap the benefit of closer margins on sales.

As better roads and railroads develop the timber resources of the Philippine Islands, the necessity for the importation of lumber will be somewhat diminished, since many of the native woods are better adapted for building purposes in the tropics.

On the whole, without seeking to be unduly optimistic, it may be safely said that so far as accurate commercial statistics enable us to judge of the future of business here, the outlook is good, and it will be extremely surprising, if the many good signs and tendencies in last year's trade do not still further develop within the next 12 months.

## RAILWAY CONSTRUCTION IN KOREA REVIVED UNDER JAPANESE SUPERVISION\*

Railway construction has been progressing towards completion with satisfactory rapidity in Korea since the war in the N. came to an end. The Japanese, with their usual enterprise, are forcing through to realization the many lines whose construction was more or less interrupted by the military campaign against the Russians, and those projected in Korean territory, with the result that today the slow old methods of transportation and their attendant drawbacks to commerce and passenger traffic are rapidly being overcome. The Seoul-Wiju line was recently opened to traffic as far as Pyongyang, and in Manchuria the Japanese engineers have opened railway communication between Liaoyang and Antung.

Work on the Seoul-Gensan line is now well under way, and it is hoped that the road will be completed by the end of the present month.

The trunk line from Fusan to the Yalu and from Antung to Liaoyang brings Japan into direct touch with the Chinese Eastern Railway, the Siberian Route, and Europe in

of the intermediate stations on the Seoul-Fusan Railway were situated in the poorest of villages and the goods carried by the railway mainly consisted of agricultural products of the neighborhood. Even these were mostly carried by waterway or on horseback, so that the railway receipts in this connection did not amount to much, the daily receipts averaging 1-Y-9.048 per m. Since 1904 the Japanese had been emigrating to Korea in large numbers, and with the opening of the Seoul-Wiju line the receipts of the Seoul-Fusan road would decidedly increase. The receipts of the Seoul-Chemulpo line showed a decrease of about 13 per cent as compared with first half of 1904. This decrease was due to a diminution in the transportation of war materials required for the construction of the Seoul-Fusan Railway, as well as to a change in the tariff fare on January, 1905.

**SEOUL-FUSAN RAILWAY.**—According to the *Korea Review* it was at the beginning of 1905 that the Seoul-Fusan Railway was opened for

in sight. After that the country becomes less heavily wooded until in the vicinity of Kongju only an occasional clump of trees is seen. In the town of Chuneui 2 tunnels are passed, each of them being approximately 100 yds. long. Nothing too good can be said of the workmanship on this road; the roadbed is excellent and for a considerable part of the way is ballasted with stone. The rails are very heavy, contrasting in this respect very favorably with those of the Siberian Railway, whose rails, in 1903 at least, were hardly heavier than those of the electric tramway in Seoul. The ties of the Japanese road are very heavy and made of a wood much resembling the ash. Here again there is a striking difference between the Japanese and Russian work, for the latter road has, for thousands of ms. ties that are simply round sticks of 8-in. diameter split in two, the rails resting on the rounded side. A very few weeks suffice to sink the rails deeply into the soft wood. The average time between Seoul and Fusan is about 20 ms. per h.



KOREAN RAILWAYS.—TEMPORARY SWITCH-BACK ON SEOUL-FUSAN RAILWAY BEHIND KONG-JU, BY WHICH A PASS WAS CROSSED BEFORE THE TUNNEL WAS COMPLETED.

that the regular steamship service between Fusan and Shimonoseki, recently established by the Sanyo Railway Company, is now in operation. The Seoul-Wiju line is in reality a continuation of the Seoul-Fusan Railway and there is every indication that the two properties will soon be amalgamated.

**FINANCIAL PROSPECTS.**—Indications are that Korean railways will prove a good investment. The last annual report of the director of the Seoul-Fusan Railway counts for little, however, that is encouraging; but conditions have been so extraordinary, from the outbreak of the Russo-Japanese War to the present, that a fair estimate of the earning powers of the lines is not possible at this time. This report showed the condition of business on the Seoul-Fusan and Seoul-Chemulpo lines.

In his address to the shareholders Dr. Furuichi, director of the company, showed that most

general traffic. Now a few hours' dash across the Straits of Korea is all the sea-travel necessary between Seoul and Tokyo, and it is more than likely that within a few years the Straits of Dover will be all the water to be crossed in going to London.

At first the Seoul-Fusan trains started from Yong-tong-po. Now the train starts from Seoul. Branching off from the Chemulpo line at Yong-tong-po, it turns to the S. and sweeps around the base of Kwanaksan giving some magnificent views of that grand cluster of rocky peaks. Suwon, with its thickly wooded mountain, is reached in about 1 h. from Yong-tong-po. Here the road skirts an extensive irrigation reservoir on one side and a fine stone quarry on the other. Throughout this whole section, at least for a distance of 50 ms. from Seoul, the country is finely wooded, extensive forests being continually

which exceeds the time of the express on the Siberian line. Over parts of the Korean line a speed of 35 ms. per h. is made. This is quite unheard of on any portion of the Siberian line. If a mixed train can make this over the Seoul-Fusan road an express can easily do 40 or 45 ms. The important point is that the road-bed is so solid and the masonry work so unexceptionable that the possible speed will depend entirely upon the engines and weight of train. It was the bad condition of the road-bed that retarded speed in Siberia.


**ROUTE FROM KONGJU.**—This road passes Kongju at a distance of some 20 ms. and then branches away to the E. to climb the two ranges of mountains that lie between the valleys of the Keum and Naktong Rivers. The work of mounting the first great pass is an arduous one, for the tunnel at this point is not completed

\* Illustrations through the courtesy of Mr. Fink editor of the *The Far East*.

and the road literally climbs the hill. The grade at one point is very steep. This will all disappear as soon as the tunnel is completed. Steep as it is, this pass does not have to be surmounted by a switchback or any other

like water. The road passes through the hills at a high elevation, and the valleys deep beneath with their clustering villages and checker-board rice-fields, pass before the eye like moving pictures.

most beautiful on the whole road. Later on the second range is passed. Here is also found an unfinished tunnel, apparently one of the most considerable on the line. Comparatively little of it is done as yet, for at the W. end the

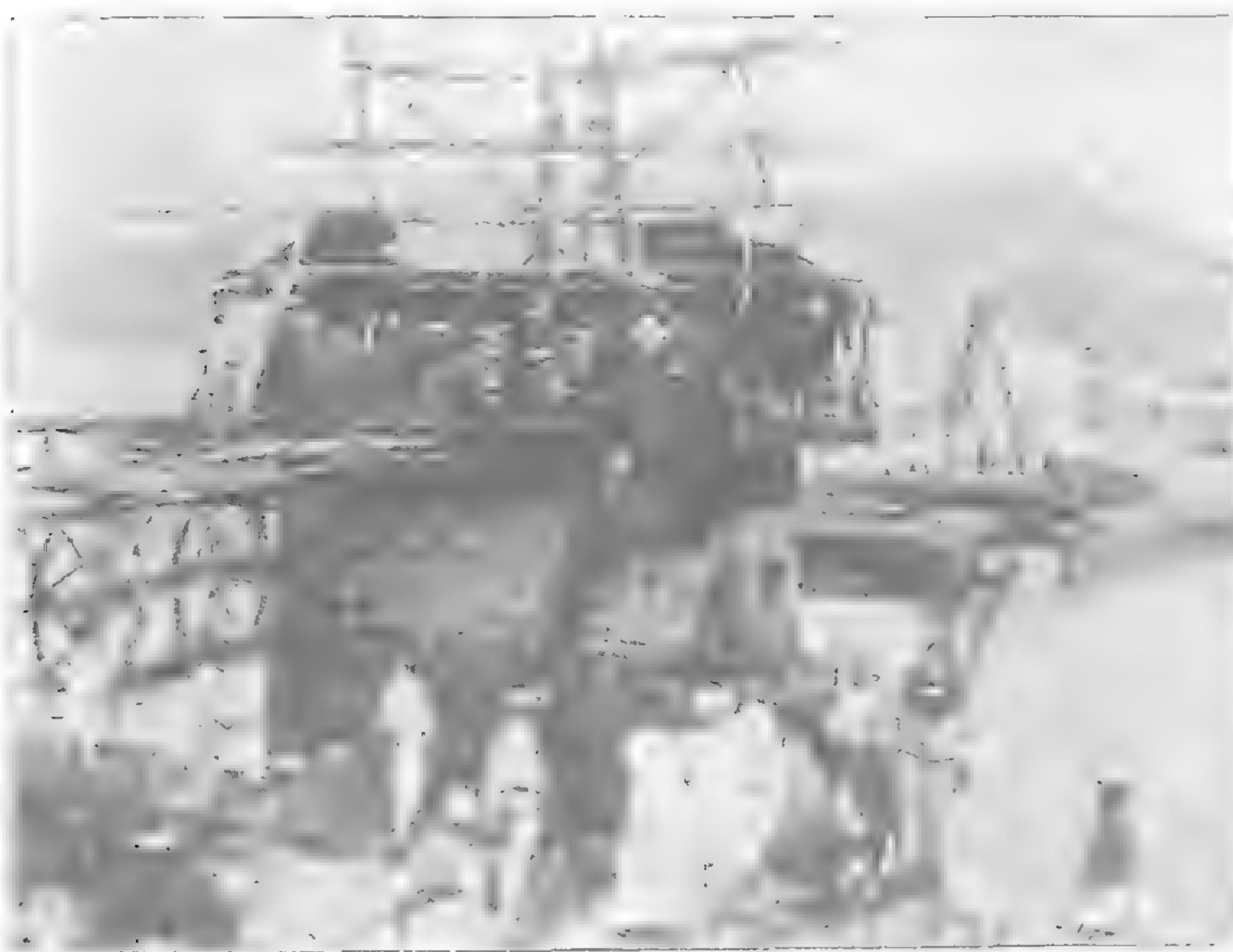


KOREAN RAILWAYS.—MAP SHOWING OPERATING AND PROJECTED RAILWAYS OF KOREA AND THEIR RELATION TO THE TRADE CENTERS OF NORTH CHINA, MANCHURIA, AND THE SIBERIAN LINE.—CONSTRUCTED LINES, ——; PROJECTED LINES, - - - - .

such mechanical trick, but we had to have an engine at each end of the train. Through this rough region the masonry work is exceedingly fine, and money must have been poured out

Passing down the E. side of this range, you cross a tributary of the Keum River on a temporary bridge. The approach to this bridge down the side of the mountain is one of the

hill had not been entered more than 30 or 40 ft. The road passes over the summit, and on the E. side requires a single switchback in order to come down to the level of the valley.



KOREAN RAILWAYS.—A BRIDGE IN CONSTRUCTION.



KOREAN RAILWAYS.—UNFINISHED TUNNEL AT THE SECOND MOUNTAIN.

TAIKU TO FUSAN.—Shortly after leaving Taiku the train climbs the ascent to the mouth of the great tunnel. This is the most arduous feat the engineers had to perform. The tunnel is upwards of 4,000 ft. long. The approach from neither end is particularly picturesque, but it is a good illustration of the determination which has marked the progress of Japanese enterprise in Korea. The road now leads along the long reaches of the Nakdong River until lights on the shipping in Fusan Harbor and finally into the terminal station, which stands half way between old Fusan, at the head of the bay, and Fusan proper at the foot. Two years have worked wonders in this port. The reclamation company has literally pulled the hills down into the water, and now there is a broad band stretching down the shore of the bay for 1 m. or more. In places the sea wall is built up from a point 35 ft. below the surface of the water.

An enormous freight traffic was formerly carried on by flat-boats on the Nakdong River. These boats were towed by men, and it took 1 mo. to reach Taiku. The railroad has practically killed this traffic, and a large number of people have had to find employment elsewhere; but to thousands and tens of thousands of people in the interior the cheapening of transit rates and the avoidance of the likin dues on this river have proved an unmixed blessing. The impetus given to trade of all kinds is rapidly giving occupation to all the people displaced and to hundreds besides.

CONSTRUCTION AND EQUIPMENT.—All the rolling stock has been imported from the United States. The locomotives are built by the Baldwin people of Philadelphia, the cars are

also of American build, and the 90-lb. rails come from the Carnegie Steel Works.

Many of the stations, numbering altogether 13, have been finished. The framework is constructed of wood, with walls of bamboo plastered over with mud, and the roofs tiled. Very neat they look, and so also do the Japanese houses along the railway—a striking contrast to the untidy and broken-down huts in which the Koreans live. All along the line there are Japanese soldiers, armed with rifles, supervising the building of the road and the bands of coolies at work. At Yong-tong-po the new line joins the railway running from Seoul to Chemulpho, the most important treaty port on the NW. coast of Korea.

The work on the Seoul-Fusan line has been carried out under the superintendence of Professor Furnichi and Mr. Oya and a large staff of engineers. The cost of construction has been £10,000 per m. The gauge is 4 ft. 8½ ins., and the steepest gradient 1:50, the sharpest curve being one with a radius of 15 chains. Altogether there are 26 tunnels, the 8 longest being the: Songhwa, 3,948 ft.; Muwulsan, 1,452 ft.; Pusang, 1,180 ft.; Hwang-Gany, 990 ft.; Kuirok, 924 ft.; Cheungyak, 858 ft.; Wolyon, 848 ft.; and the Hwakwan tunnel 825 ft. The 96 bridges have a total length of 23,794 ft.:

	Feet.
Crossing the Han River	2,054
" Nakdong River	1,436
Keum-ho River	1,217
Keum River (2)	1,015-824
Mil-Yang River	979
Kyongho River	848

In addition to these there are some 500 smaller bridges with a total length of 3,418 ft.



KOREAN RAILWAYS.—QUARRY FROM WHICH STONE MATERIAL WAS TAKEN.

KOREAN RAILWAYS.—PROVISIONAL BRIDGE ACROSS RIVER KRUN.

#### ERROR IN AN ADVERTISEMENT

In spite of the utmost vigilance there are times when the best regulated newspaper office will commit an error that might operate to the detriment of one or more of its most highly esteemed patrons. An instance:—In the full page advertisement of the Kelly-Springfield Road Roller Company, which appeared in the November issue of *The Review*, there was printed the cut of a sugar mill. This illustrating block represented a mill which is built by Messrs. John McNeil & Co., of Glasgow, for which firm the Manila agents are Messrs. Fred. Wilson & Co. While the local agency of The Kelly-Springfield Road Roller Company, of which Mr. C. E. Helvie is manager, handles sugar machinery of every description, it does not handle the machinery built by Messrs. John McNeil & Co. Therefore, the publication of the cut in connection with Mr. Helvie's agency should not have occurred. It was a mistake, unwittingly made, which is regretted.

#### ATLANTIC, GULF AND PACIFIC COMPANY

As the old year draws to a close the well-known engineering and contracting concern, the Atlantic, Gulf and Pacific Company, finds itself exceedingly busy in the Philippines. Originally, its efforts were concentrated on one big job—the development of Manila Harbor. Now, besides work on the additional break-water, which the company will finish by New Year's Day, it is building the extension to the E. breakwater; driving the bulkhead in front of the Luneta; pumping mud on the original filled area; building the Pasig River wall by the Bridge of Spain; erecting a concrete-steel cathedral for the Protestant Episcopal Church in Malate; erecting a central station for the Philippine Islands Telephone and Telegraph Company, also of concrete and steel; raising a vessel for the Navy Department



KOREAN RAILWAYS.—PIERS FOR A PERMANENT BRIDGE.

at Cavite, sunk during the recent typhoon; building a dredge for the Navy Department at Olongapo; furnishing ties and rails for about 2 ms. of track for the Quartermaster's Department, U. S. Army; putting in foundations for the Ayala Bridge across the Pasig River, and in due time will put a steel bridge thereon; erecting a bridge at Aparri; building a dock at Jolo; completing seawall and filling at the Commanding-General's residence, Malate, and numerous other smaller jobs. The prestige which the Atlantic, Gulf and Pacific Company has established for itself in the Philippines and throughout the Far East is attributed mainly to the efficient management of Mr. H. Krusi, 1st vice-president of the company, and Mr. Wickham Quinan, the company's office manager in Manila.

#### AMERICAN TRADE WITH CHINA

According to the New York correspondent of *The London Times*, representatives of the leading Suez steamship companies and trans-continental lines have decided to raise the rates on cotton goods shipped to China. The new rates are expected to go into effect July 1st, 1906, and will be as follows from southern mill points:—Overland rates, \$1.25 per 100 lb.; and via Suez Canal, c.62 $\frac{1}{2}$ . The present Suez Canal rate is 22s. 6d., or about \$5 c.62 $\frac{1}{2}$ . The measure-



KOREAN RAILWAYS.—VIEW OF RIVER MAKONG FROM RAILWAY RIGHT-OF-WAY.



KOREAN RAILWAY.—TUNNEL NEARING COMPLETION.

ment rate of cost will be abandoned entirely for the basis of weight, as the latter is considered more just. Owing to excessive competition, the rates on merchandise sent to China have been going steadily down for about 3 yrs., and at one time were as low as \$2.50 per ton. It is understood that the contemplated increase will not affect the big trade with China in machinery, tools, implements, and canned goods, but only cotton goods. The report is creating a good deal of interest, owing to the large purchases of cotton goods by Chinese buyers already made for shipment well into next year. In this connection it may be added that during the past few weeks there has been somewhat of a revival of activity among Chinese buyers after the period of dullness. On the present movement some 25,000 to 30,000 bales of goods have been taken, principally 3-yd. sheetings, and deliveries extend as far ahead as October of next year. In all cases full prices have been paid. The most recent inquiries cover a broad range of goods, and in some cases call for very light weight sheetings. Knit goods have also been taken for export in increasing quantities.

#### COAL IN MANCHURIA

According to L. Pervinquier, the coal seams near Mukden, in Manchuria, are intercalated among grits and shales. Small coal basins

are fairly numerous in the Liaotung peninsula; as at Wuhoshin, on Society bay, where several seams, varying from 3 to 13 ft. in thickness, of friable coal have been worked; at Talienvan; at Saimaki, on the Korean frontier, where a seam (3 to 5 ft. thick) of crumbly bituminous coal occurs. At Pönnhsihu, southeast of Mukden, five or six seams of coal, each 1 or 2 ft. thick, have been proved; the conditions appear favorable for working, but the strata are much faulted. The mineral is friable, though not specially bituminous, and yields coke of middling quality. None of these coals are suitable for naval purposes or for locomotives, nor would it pay to export them. Good anthracite, however, has been found in Liaohsi.

In N. Manchuria the true coal measures are not so well developed, but coal seams of later age (Triassic, Jurassic and Tertiary) crop out at several localities in the upper Sungari valley, in the neighborhood of Kirin, in the Argun valley, where there is a thick seam of lignite.

It is expected that the coal-mining industries will witness a great expansion during the next few years. Japanese companies are planning to open up a number of new mines, and experiments are being made with washing plants, with the view of improving the quality of the product of existing mines. Railroad connections with the coalfields will be largely extended.

## HONGKONG-AMOY-MANILA LINERS "RUBI" AND "ZAFIRO"

On the adjoining page will be found a series of photographs illustrating the splendid steamship service of the China and Manila SS. Company, Ltd., between Manila and Hongkong, the vessels of which occasionally calling at Amoy.

The vessels permanently on this run are *Rubi* and *Zafiro*. They were built by Messrs. D. J. Dunlop & Co., Ltd., at Glasgow, in 1901, especially for this service, and their popularity since they have been in commission proves the foresight of the company in providing extravagantly for the constantly increasing 1st-class passenger travel back and forth over the China Sea. The officers of both ships are gentlemen, courteous and obliging; and at all times they are on the alert to make passengers comfortable during their voyage of about 48 hrs. duration across the waters.

*Rubi* and *Zafiro* are sister ships, practically of the same tonnage and general design. They are steel screw vessels of about 2540 tons register, being approximately 294.8 ft. in length, with a beam 40.8 ft. and a depth of 22.7 ft. Having been designed especially for this trade, both *Rubi* and *Zafiro* are so arranged that the staterooms and saloons are well ventilated and cool at all times. The electric equipment is of the most modern departures in marine electrical engineering. Every portion of the ships, from the foremast light to the stokehold, is lighted by electricity, and saloons and staterooms are cooled by electric fans.

The social hall, smoking room and dining saloon are models of comfort and luxury. Elegantly upholstered lounging chairs make the voyage more tolerable for those who are afflicted with *mal de mer*. A carefully selected library tempts the passengers of literary inclination, while there is a broad awning-covered promenade deck for those who care to walk or compete in the conventional ship games.

The *cuisine* is unexcelled in this quarter of the globe. A competent steward, assisted by a small army of *chefs* and long-coated, silent Chinese servants, provides all the creature comforts one's heart could desire.

The efforts of the gentlemanly officers to promote social life on these splendid steamships have not a little to do with the popularity of *Rubi* and *Zafiro*. Captain R. W. Almond, who commands *Rubi*, because of his long service, intimate acquaintance with the China Sea, and his never-failing courtesy and attention, has earned the sobriquet of "Commodore of the Fleet." Many of those who have been fortunate enough to make the short voyage to Hongkong and back with him—for generally they want to come back on his boat—have some tall yarns to repeat about the wonders of the deep—viewed through "Commodore" Almond's glasses. First Officer Notley and Chief Engineer Hill are also numbered among the popular officers of *Rubi*, with whom passengers come in contact.

Captain R. Rodger, the able commander of *Zafiro*, also has a large following of friends and admirers who profess to believe that the trip across can only be safely made on his steamship. First Officer Frazer and Chief Engineer Henderson are his lieutenants in the social hall as well as in his management of the steel liner over which he is master.

Both *Rubi* and *Zafiro* have become firmly established as favorites with the traveling public of Manila, and seem to be destined to remain so for many years to come. The general managers of the China and Manila SS. Company, Ltd., are Messrs. Shewan, Tomes & Co., of Hongkong. At Amoy the interests of the company are in charge of Messrs. Tait & Co. Both of these firms are well known throughout the Far East. The

Manila agents are Messrs. Warner, Barnes & Co. Everywhere all agents of the Manila and China SS. Company, Ltd., treat travelers with uniform courtesy.

### COMMERCE AND INDUSTRY IN MANCHURIA

The new American consul at Newchwang recently furnished an interesting report regarding commerce, agriculture, and industry in Manchuria. He says in part:—

"American goods in Manchuria are sold on their merits. American cotton goods are the best in the market; so is the kerosene oil, and hence the large sales. America sells more to, and Japan buys more from Manchuria than any other nation. Chinese consumers say American cotton goods are not made for looks or show. On the other hand, some of the Chinese and Japanese goods in a similar line are found to be a sort of imitation of the American product, and this adds to the popularity of the fabrics that will wear. At the same time, however, the Japanese and Chinese methods of manufacture are improving. This fact must be kept in mind in considering future business. In the Far East, as elsewhere, where there is an open market, the consumer is looking for the best bargains.

"The Chinese of N. China are very much like those of S. China—they are careful, close buyers. They will buy to the best advantage, provided there are no restrictions placed upon trade. One of the largest dealers in American cotton goods here or elsewhere in the Orient informs me that the manner of wrapping a bale of cotton goods may decide its sale, quality being equal or almost equal. For instance, if the Chinaman who buys the bale observes that in wrapping it the manufacturer or packer has put in plenty of covering he may purchase that particular bale in preference to another stock which has been wrapped in a manner that will give the man who breaks the package but a very slight 'squeeze' in the way of coarse cloth wrapper.

"The American cotton goods sold here are handled through Shanghai almost entirely, and therefore the movement to boycott American goods on account of our treaty relations has been felt in this port in two ways. The strongest influences originated with Shanghai parties and were largely beyond the control of local, Newchwang, counteracting arguments. Other influences were of local origin, resulting mostly from Tientsin newspaper agitation. Several meetings were called for the purpose of securing united action among Newchwang merchants in opposition to American goods but in all instances leading Chinese merchants, who had expressed favourable opinion regarding those articles of American manufacture that are sold here, were present. They strongly opposed any agitation, and although the Chinese circulars issued on these occasions, and originating in Shanghai, called for some immediate and positive action, no organized movement in the nature of a boycott has followed. Many leading Chinese merchants state positively that no boycott of American goods will be sanctioned by them, and that the anti-American agitation will die out. While it is true that a few of the N. Chinamen seek to migrate to America, the major part of the aggressive Chinese merchants in N. China come from S. China, and, therefore, it is, presumably, easier than otherwise would be the case to enlist their sympathies in a movement originating among their former friends or acquaintances. Briefly stated, the American cotton fabrics sold here are in the lead, because the purchasers find them the best the market affords.

"When the Chinese cotton mills started it was predicted that they would eventually supply the needs of the Oriental market. The Chinese cotton producers, in resorting to various methods of squeezing, virtually killed the goose before it began laying golden eggs. They attempted to obtain high prices by cornering methods, they utilized unfair methods in attempting to increase the weight of the bale; and such

methods, coupled with the fact that the Chinese cotton product did not equal that of the United States, crippled the industry in China, at least temporarily. Now, however, these defects and obstacles are being removed, some Japanese manufacturers are becoming interested in the Chinese mills; better methods prevail, and with markets favorable and friendly to the Oriental product the outsider will necessarily have to offer, in due time, additional inducements.

"With the Russians removed from this market, the American kerosene oil has a practically clear field. For a time during Russian occupation the American product was threatened through influences that were brought to bear on the local trade in favor of the Russian product. With oil coming without breaking cargo direct from Philadelphia to Newchwang, the unprecedented receipts of 1904 will be undone, and the E. part of Asia will have little chance to compete with the American product. American lumber, canned goods, flour, cigarettes, sewing machines, and cooking and heating stoves find a market in Manchuria, and the demand at present for these and similar articles is steady and continues in a limited way."

### SINGAPORE HARBOR SCHEME

Engineering and other contractors of the Straits Settlements are considerably wrought up over the decision of the British Government in regard to the new harbor improvements projected there and what is affirmed to be its prohibition of local tenders.

The cudgel has been taken up for the local contractors by *The Straits Budget*, which says that Straits millions will fatten the crown agents' *kongsi* as a result of the "improvement job" while Straits contractors will not get even a sub-contract. The *Budget* says that Colonel A. Murray, the Colonial Engineer, has admitted that there was a certain amount of truth in the claims of the Straits contractors, but the government (and he was speaking unofficially) had to consider whether a firm allowed to tender had sufficient capital and plant, and could give a large security for the proper execution of the work. Mr. Palliser had desired to tender for the work, but the Government could not see its way to sanction this, for the whole thing was arranged between the Consulting Engineers and the Secretary of State. "And," added the Colonial Engineer, "the tenders are from those contractors with a known reputation for dealing with this special class of work."

In response to an inquiry, Colonel Murray remarked: "It is not everybody in England who has been asked to tender, but only contractors who are proved to be thoroughly reliable men in every regard. Probably the men here (in the Straits) who wish to take up the contract don't realize the difficulties in the way."

Again, unofficially, Colonel Murray thought local men could seek employment by working under the accepted contractor, but he added that he thought in the specifications it was provided there should be no sub-contracts. He, however, returned to his original observations with reference to the importance, the necessity, of placing a colossal undertaking of this nature in the hands of people of substance and repute.

Continuing, he said: "The representative of Pearson & Sons, who are carrying out the work of construction of the Imperial Dock at Dover, and a representative of the firm of Wills, who are carrying out the great works at Gibraltar, have decided to be on the spot to investigate conditions for themselves. About half a dozen firms have tendered." Colonel Murray then called the *Budget's* representative's attention to the report by Messrs. Coode, Son, & Matthews on the "Proposed Harbor Improvements at Singapore" dated February 15th, 1904, paragraph 89.

This states: "Tenders would, of course, only be invited from experienced contractors, possessing the necessary capital and plant. We consider that offers could be obtained from at least 6 such firms, on lines corresponding with those adopted by the Admiralty in the case of contracts let by them within the last few years."

And to this the Colonial Engineer thought there was nothing more to add.

CHINA AND MANILA SS. COMPANY'S LINER *RUBI*, SISTER SHIP OF *ZAFIRO*.

UPON PROMENADE DECK.



ENTRANCE HALL.



DINING SALOON.



SOCIAL HALL.



A STATEROOM.



SMOKING ROOM.

## CHINESE ENGINEERING AND MINING COMPANY, LTD.

The report of the directors of the Chinese Engineering and Mining Company, Ltd., whose head offices in China are at Tientsin and whose interests in the Far East are under the able direction of Major W. S. Nathan, R. E., submitted at the fourth annual general meeting of the shareholders, recently, held at Winchester House, Old Broad st., London, recently, is as follows:—

The directors beg to submit herewith the audited accounts for the year ending February 28th, 1905. The profit and loss account for the year, after providing for interest on the debenture issue, the sum of £10,000 attributable to the year in respect of the redemption of debentures, and the expenses of administration in Europe, shows a balance of £162,959.5s.6d. Out of this sum £11,000 has been provided to cover the costs of the action which was referred to at the last general meeting, and £40,000 has been transferred to the reserve for depreciation account (as against the sum of £20,000 transferred last year), leaving a net profit, subject to provision for income-tax, of £111,959. 5s. 6d., which, together with the sum of £1,395. 16s. 2d., brought forward from last year, makes a total of £113,355. 1s. 8d. An interim dividend of 1s. per share in respect of the profits of the year was declared on June 22d, last, absorbing £50,000. The board propose that a further dividend of 1s. per share be declared, free of income-tax, making 10 per cent for the year, which will leave a balance of £13,355. 1s. 8d. to be carried forward to the next account, subject to provision being made for income-tax. The debenture issue has been reduced during the year by the sum of £58,040; £10,000 having been drawn for redemption in the usual course on December 31st, last, and debentures to the amount of £48,040 having been purchased at a discount and cancelled, the amount of the discount being £2,168. 2s 8d. During the year three of the company's steamers have been sold at satisfactory prices, the total realized being in excess of the inventory value. A new steamer, *Kaiping*, specially adapted to the requirements of the company's trade, with loading capacity of 3,540 tons and extensive passenger accommodation, was laid down on the Tyne in February last and launched in June last, and is now making the outward voyage to China. The cost of this steamer is approximately £42,000. Since the autumn of 1904 the port of Ching-wantao has been thrown open to the reception of shipping throughout the year. Extensive buildings have been erected at the port on behalf of the Transvaal Labor Importation Agency in connection with coolie emigration and for the Imperial Maritime Customs, as well as buildings for the company's own purposes. The directors retiring in rotation are Colonel Albert Thys, Mr. Edmund Davis, Mr. G. T. Symons and Mr. W. F. Turner, who offer themselves for re-election. The auditors, Messrs. Annon, Kirby, Dexter and Co., retire in accordance with the articles of association, and, being eligible, offer themselves for re-election.

In moving the adoption of the report, Mr. W. F. Turner said:—

It was a great satisfaction to be able to say, in the words used a year ago, that the accounts dealt with increased sales, increased profits, increased reserves, and an increased dividend. As to the debentures purchased and cancelled during the year it really represented the investment of a portion of the reserve accumulating out of profits for the past few years, and which had now reached £80,000. In no other way could they have utilized the money in so advantageous a manner. The profit and loss account showed a total increase on the credit side of over £55,000, of which £52,712 was increase of gross profit in China, the total to the credit of the account being £210,088. One item in the accounts was law costs, estimated at £11,000. This was due to the action in the English courts, which had been referred to in the last two general meetings, arising out of the purchase of the company's undertaking, the company being one of several defendants. It was stated at the general meeting two years ago that the object of the action was to enforce the terms of a memorandum dated February 19th, 1901, with reference to the formation in China of a local board for the administration of the company's business there, and the appointment of Chang Yen-mao as director-general there, and that the board of directors were not a party to this memorandum, and had, in fact, no knowledge of it until afterwards, and they were advised, and believed, that it had no legal effect whatever. The trial took place in the early part of this year, and was an extremely protracted one, judgment being given on March 1st, last. The court held that the memorandum was binding upon the company, and that effect must be given to it, and the company was ordered to pay the plaintiff's costs. The amount stated in the accounts includes the taxed costs of the plaintiff and the provision of a sufficient amount to cover the company's own costs. The directors were advised by most eminent counsel to appeal against the judgment in certain important respects, and notice of appeal was lodged at the end of April last. Under these circumstances it was impossible to discuss or comment on the subject. As to the coal trade for the past year, the output was 876,725 tons, while the sales amounted to 843,281 tons, the company's own consumption being nearly 70,000 tons. The sales during the year had not been limited by the demand but by the output, as the economical value of coal, compared with the fuel used by the natives up till recently, had been brought home to the Chinese by the gradual introduction of coal into the markets. So great was the change in the situation that the general manager informs them that the demand for dust coal by the Chinese alone largely exceeds the present total output of the mines. As the important question was not primarily the increase of sales, but the increase of output, and as this was mainly a question of dealing with the water in the Tongshan and Linsi mines, tenders had been invited for a powerful electrical pumping plant and the erection of a central electric power station at Tongshan.

Mr. Edmund Davis seconded the motion, which was agreed to unanimously.

The Chairman in replying to a vote of thanks expressed the indebtedness of the shareholders and the board to the agent and general manager (Major Nathan—who was assisted by an excellent staff—for the admirable manner in which the affairs of the company had been managed in China. The shareholders' thanks were due to him no less than to the board for the results which had been submitted.

## MINERAL WEALTH OF SIAM

At this moment, says the *Siam Free Press*, when Siam is shaping out a program of general development and progress in creating new laws, introducing various reforms, important schemes of public works, including sanitary and water systems, irrigation schemes and the extension and development of agriculture, defining the laws of land tenure, lease holding, which until now has been a fruitful source of quibbling, it may be interesting to say a word in passing on the mineral wealth of Siam of which very little is known, but which is bound to become a fruitful source of revenue to the government later on. From time to time much surprise is expressed at the little attention that is paid to the exploitation and development of this vast source of wealth in Siam, and how is it that capitalists, until now, have done nothing towards this end?

There are several reasons why mining as an important industry in Siam has remained almost a dead letter. The principal cause may be attributed to the fact that the government hitherto has taken little trouble to exploit the mineral riches of the land, and invite capital to carry on the enterprise. In fact it is only very rarely the subject is ever touched upon, and then very little is said on the matter. The second reason is the great difficulties in the way of the would-be investor, in obtaining the necessary permission to prospect, and, afterwards, securing the concession; while the third reason is the poor facilities existing in the way of means of communication which largely account for the non-success of many branches of business, as well as the difficulty of securing manual labor. It is not for these reasons, however, that such vast sources of wealth should be abandoned. It lies with the government to remove some of the difficulties alluded to, and energy and enterprise will do the rest. We know of two mines which are being worked at present, and the prospects for rich returns are highly satisfactory.

In Siam, gold, silver, copper, tin, iron, and lead are found in rich deposits in many places. And the question has been frequently asked: Why does not the Mining Department arrange a proper geological map? Such a map would be of great value, and would convince capitalists of the vast subterranean treasures that still lie dormant awaiting the hand of energy and enterprise to turn them to account and add thus to the wealth and prosperity of the nation. Surely, the budget of Siam is large enough to permit of this study?

Several regions have already been prospected, and most valuable indications have been obtained at Lopburi, Tien Touk, Lom, Watana, Kabin, Ratburi, Bukanon, Korat, Punkio, and in several other districts in the peninsula and at Bang-ta-pan. In the region of Petrew-Pachim, one part is known to be prospected only in some points which extend up to the great mountains of Chantaboon passing by Mong Panat. The natives of that place are working the alluvium, which work, however, is only found relatively productive. The gold is sometimes found in nuggets of four or five ticals weight. Tin is also found there, but the work of developing the industry has not yet reached the preliminary stages, only some holes having been made by the natives. Kabin is the oldest known mine in Siam, the working of which will again be undertaken on a larger scale than ever. Watana has large centers of rich strata. Sisophone is the great coming mine and already promises splendid results, from which the government is likely to derive great benefit when the railway from Bangkok to Pachim, Wattana, and Batambong, will be accomplished. The famous Khao Kampeng (Phnom Dong Reck) of Cambodia is very little known.

Coal also may be found in abundance, and taking everything into consideration, it is a matter of surprise that the Siamese Government, in its endeavors to find new sources of revenue, does not attempt enterprising works of research into such matters, from which large benefits would be sure to accrue which would greatly help in pushing forward sanitary irrigation and railway schemes. Why not favor a society having for its object the study of such questions, as well as those of quarrying and procuring limestone, etc.? If these things can be found in Siam there is no need to have them brought from other countries. Those numerous calcareous mountains, ignored until now, could be turned into a rich source of revenue for the country. Hydraulic limestone cement, etc., can be made here as elsewhere, and so can the iron mines be turned to account.

It is, therefore, greatly worth the while of the Siamese Government to take the trouble to show forth the richness of the soil in mineral wealth, as well as its fertility for agricultural purposes. Numerous societies have been formed in Bangkok during recent years the latest being an engineering society embracing all branches of the profession, having as members, electric, mechanic, hydraulic, irrigation, mining, and architectural engineers.

## SUMATRA AND BORNEO TOBACCO

The final autumnal sale of tobacco in Holland was recently held at Amsterdam. Fifteen thousand nine hundred and eighty-six bales of Sumatra and 2,638 bales of Borneo were offered for sale by tender. Considering the class of leaf offering, fair prices were realized from the Sumatra, though the Borneo lots did not attract much attention. Summing up the year's results, *The London and China Express* says that two leading facts at once stand out—a diminution of supply and an enhancement of prices. In the present year the Sumatra crop consisted of 233,057 bales, which realized an average price of 99 Dutch cents, a half-kilogram. In 1904 the crop was 254,168 bales and the price c.92. The present year's average is the best since 1901, when c.111 was obtained for 223,731 bales. The general tendency with regard to supply and demand is for the latter to steadily increase, while the former is liable to violent fluctuations, in which weather conditions naturally play a leading part. At the moment, however, demand has undoubtedly overtaken supply, and the crop of 1905, just gathered in Sumatra which will come forward for sale next year, is reported to be 10,000 bales short of the crop just sold. In view of this, it is not surprising to find that a very firm tone has characterized the tobacco market of late, even though the leaf offering has not, taken throughout, been of good quality. Of really fine tobacco, suitable for the American market, there has even been a scarcity, and prices have ruled correspondingly high. Those estates which have yielded only medium and low-class leaf both years will probably be disastrous. This class of tobacco, it must be remembered, is, as the saying runs in Amsterdam, either "gold or iron." Amongst concerns marketing over 5,000 bales the company which has done best this year is the Amsterdam Deli Compagnie, which marketed 10,074 bales at an average of c.159. The United Lankat Plantations Company, Ltd., takes second place with c.134 for 9,189 bales, though 2 picked private estates obtained a higher average for comparatively small quantities. The Rotterdam Deli Maatschappij comes third with c.119 for 5,186 bales. The great Deli Maatschappij averaged c.108 for 53,508 bales, from 22 estates, the averages of which varied from c.65 to c.174.

The Borneo crop was a very poor one. The average is only c.62 for 16,615 bales, against c.80 for 17,043 bales last year. The New Darvel Bay Borneo Plantations, Ltd., sold 3,686 bales. The New London Borneo Tobacco Company, Ltd., sold 8,668 bales at c.40, the New London and Amsterdam Borneo Tobacco Company, Ltd., 2,277 bales at c.44, and the Sapong Rubber and Tobacco Company, Ltd., 617 bales at c.34. The weather in Borneo severely handicapped planters, but the crop now in the sheds and coming forward next year enjoyed more favorable conditions.

## MESSRS. H. E. HEACOCK & CO., JEWELERS OF MANILA, P. I.

The accompanying illustration gives a fine interior view of one of the most artistically arranged jewelry houses in the Far East. It shows the retail store of Messrs. H. E. Heacock & Co., which occupies spacious premises on the second floor of the McCullough building, in Manila, P. I.

The firm of H. E. Heacock & Co. came to Manila in the spring of 1901 and started in wholesale jewelry business as a branch of Messrs. Heacock & Freer, of San Francisco, Cal. Mr. H. E. Heacock started the business and Mr. C. F. Preusser came out and joined him in June, 1902. This year the firm has added a retail department to its establishment, and it is now doing a large and prosperous wholesale and retail business, dealing entirely in American goods and such articles as the firm manufactures in its own workshops. It also does a large watch and jewelry repair business.

exclusive of Chinese junks engaged in foreign trade, and yet, without them, Hongkong is rated as the first shipping port in the world. Following are the totals of entrances and clearances for some of the principal ports:—

Hongkong...	19,241,889
London	18,939,172
Antwerp	18,433,884
New York	17,939,168
Hamburg	16,469,673
Liverpool	4,716,793
Rotterdam	1,597,819
Cardiff	1,119,472
Singapore	1,093,919
Marseilles	11,657,977
Monte Video	11,133,872
Colombo	10,098,753
Lisbon	9,459,932
Tyne ports	9,407,316
Gibraltar	8,882,156
Malta	7,769,999
Capetown	7,185,268
Kobe	7,165,182
	6,670,677



RETAIL JEWELRY STORE OF MESSRS. H. E. HEACOCK & COMPANY.

Seven watchmakers and 6 manufacturing jewelers are employed in this establishment, which is equipped with a very complete workshop containing all the latest improved appliances for doing work, including gold, silver, and nickel plating.

H. E. Heacock & Co. carry a line of the very best goods that the American market affords. The leading firms they represent are the Keystone-Elgin Watch Company, the New England Watch Company, the International Silver Company, the Ostby and Barton Company, one of the largest manufacturers of gold rings in the world; the New Haven Clock Company, the American Cut Glass Company, and Messrs. Manning, Bowman & Co., manufacturers of nickel ware. In addition to the above they handle the lines of many other manufacturers whose goods are of the highest grade, and the most artistic design and workmanship. All goods sold by this firm are guaranteed.

### HONGKONG LEADS IN SHIPPING.

A recent parliamentary blue book, published in London, gives various tables relating to the shipping of the world. Hongkong figures are

Melbourne	6,487,290
Shanghai	6,192,044
Sydney	5,934,411
Calcutta	3,032,326
Bombay	3,000,199

### "A SIMPLE PUNCH CHUCK"

Before a recent meeting of the Engineering Society of Siam (Bangkok), Mr. J. W. Hinchley, A. R. S. M., Wh. Sc., read a paper on *A Simple Punch Chuck*, which was as follows:—

"The engineer of the East must approach all his problems in an entirely different spirit to that in which similar problems may be approached in the West. The unskilful character of the workmen, their lack of thought, and the entire absence of what is called conscientiousness in work makes it necessary for the engineer to be very careful in adopting new methods which call for these qualities on the part of the workmen; in fact the engineer has constantly to devise methods by which things, in the ordinary way will not go wrong, rather than methods by which some new result may be accomplished. The simple punch chuck I wish to describe illustrates these remarks. In punching from sheet metal large numbers of

similar pieces it is usual to make the fittings or chucks for both punch and die immovable but on the same centre line so that if these parts are truly turned their alignment is certain. Unfortunately there are practically no workmen in the East who can be depended upon to make these parts accurately, and also to fix them in the machines truly; the simple punch here described is one by which the alignment and die is made certain when being fixed in the machine, however poor the character of the workmen."

Mr. Hinchley then described his punch chuck in detail by means of a drawing.

### SULPHUR IN JAPAN

Sulphur is widely distributed in Japan, on account of the volcanic nature of the island, but is most actively mined in the north; it occurs generally in the vicinity of still active volcanoes. There are six principal mines, in order of importance: Imaonobori and Tsurugisan in

Hokkaido province, Skiranesan in Tochigi, and Yahukodoyama, Doro-in and Iwojima in Sahuma. The first two belong to the firm Mitsui Busan Kaisha, of Tokyo.

The country's output has grown from 10,000 tons in 1900 to above 20,000 tons in 1904, and is likely to grow still further. Domestic consumption takes only a quarter of the output, the consuming industries being the manufacture of matches, for which there are numerous plants, of explosives and of chemicals. As the price of sulphur advances, pyrite is being substituted, the supply of which comes mainly from Australia.

Exports amount to 14,000 or 15,000 tons per year, the W. coast of the United States and Australia being the largest consumers; Hakodate is the usual shipping port, although Kobe and Nagasaki ship small quantities to China.

In N. Japan, snow interrupts activities for five months in the year. The process of extraction is still primitive; the ore is put into iron receptacles and heated to 115° C. The Mitsui company, a few years ago, introduced modern Gill's furnaces such as are used in Sicily.

The yield of sulphur from Japanese ore is probably the highest in the world.



BOTANICAL MUSEUM.



BOTANICAL MUSEUM, REAR VIEW.

## THE SCIENTIFIC EQUIPMENT OF THE BOTANICAL INSTITUTE, JAVA

In connection with a report of Mr. Elmer D. Merrill, head of the Division of Botany of the Bureau of Forestry, Philippine Islands, made after an official visit to Java for a season of investigation there in the interest of the forest flora of this archipelago, appears a most interesting and instructive description of the Botanical Institute of the Department of Agriculture of Java. Mr. Merrill records some of the methods of investigation in vogue there and tells of the equipment of the Botanical Institute as he found it.

**EQUIPMENT.**—The present magnificent equipment and wide influence of the Department of Agriculture is due largely to the well-directed efforts of Dr. Treub, the director, a gentleman who is by education and inclination most admirably fitted for directing such an institution. At the time of his appointment in 1880 the institution practically corresponded to what is now the fifth division; for at that date that most practical adjunct, the experimental garden, had been established but 4 yrs. Since the year 1880 the institution has extended its field from almost pure botanical work, to investigations

which at the present time cover all lines of tropical botany and agriculture. Thorough work is the watchword; and the success of the many investigations carried out at Buitenzorg have had great influence not only on the agricultural development of the Dutch East Indies, but throughout the tropics. The success of the investigations made at this institution is recognized by the Dutch Government, as is shown by the large appropriations made for its maintenance and for special investigations, construction of new buildings, etc. It is also interesting to note here the interest that the Dutch planters take in the institution; for the entire expense of certain investigations is borne not by the Government but by an association of planters. In 1890 there were but 4 laboratories; to-day there are 8, each with most modern equipment. The working staff of the institution at present numbers about 30 Europeans and more than 200 natives.

The Botanical Garden, from a climatic standpoint, is admirably situated, for under tropical conditions it is necessary, in order to have a successful garden, situated in a locality

where the rainfall is distributed throughout the year instead of having the two well-marked seasons—wet and dry. At Buitenzorg this condition is fulfilled, for during the so-called dry season rains are frequent, while during the rainy season one can expect rain every day for 3 hrs in the afternoon at about 4 or 5 o'clock. The average precipitation in a year is about 4,680 mm., while sometimes as much as 160 mm. will fall in 24 hrs.

The experimental garden consists of 180 acres, and is situated about 2 ms. from the Botanical Garden proper. The object of this garden is to grow species of economic importance on a large scale; to supply material for investigations made in the various laboratories; experiment with various methods of cultivation, treatment etc. Practically all the tropical plants of great economic importance are found here, each species being represented by a large number of specimens. The species cultivated include many varieties of coffee, tea, and cacao; abaca and other fiber plants; pepper, nutmegs, cloves and other spices; erythroxylon, cinchona, and other plants producing alkaloids; palms of economic importance; grasses yielding essential oils; numerous varieties of gutta-percha, caout-

(Continued on page 184.)



BOTANICAL MUSEUM, INTERIOR, MAIN FLOOR.



BOTANICAL MUSEUM, INTERIOR, FROM THE BALCONY.



HERBARIUM BUILDING, FOREST FLORA INVESTIGATIONS.



LABORATORY FOR SYSTEMATIC BOTANY, FOREST FLORA INVESTIGATIONS.



OFFICE OF THE EXPERIMENT GARDEN.



AROID HOUSE.



NEW CANARIUM AVENUE.



VIEW IN THE PANDANUS SECTION.



CANARIUM AVENUE.



A PALM AVENUE.

#### THE SCIENTIFIC EQUIPMENT OF THE BOTANICAL INSTITUTE, JAVA

(Continued from page 182.)

choue, and other gum-producing trees; plants producing dyes, tannin, camphor, etc. Also connected with this garden is a large area of paddy land for experimenting in rice culture.

LABORATORIES.—For many years but one or two laboratories existed at Buitenzorg, and as late as 1890 there were but four; to-day the following laboratories exist, all with modern equipment: Agricultural chemistry, pharmacology, agricultural zoology, vegetable pathology and physiology, botanical laboratory reserved for foreign investigators for personal work, laboratory for the study of tea, laboratory for the study of rice, and laboratory at Tjiboda for the study of the virgin forest. At present a large building is in course of construction to be devoted to agricultural chemistry.

The herbarium, containing approximately

200,000 specimens, consists of the old or great herbarium, which is deposited in the botanical museum; the new, or forest flora herbarium, which occupies a separate building at the present time, but eventually will be combined with the great herbarium; the "garden herbarium," species cultivated in the laboratories for the use of foreign scientists; and the "Herbarium Borgoriense," a collection of the plants growing in the vicinity of Buitenzorg.

Primarily, the Department of Agriculture was a botanical garden pure and simple; and in its early history, although some attention was given to the introduction, cultivation, and dissemination of plants of economic value from other countries, its chief object was the study of systematic botany. As was the case with the many botanical gardens established by the English in the Tropics, this institution, as the flora of the country was worked up, gradually increased its work on economic lines, until

to-day, although much attention is given to systematic botany, morphology, embryology, ecology, etc., the greater part of the work done is of an economic nature; the establishment, development, and maintenance of the botanical garden being simply a means to an end, namely, the application of science to the economic agricultural questions of the day.

EXPERIMENTAL STATIONS.—In the Island of Java there are 2 experiment stations for sugar; 1 in E. and the other in W. Java, and an experiment station for cacao; all of which are independent of the institution of Buitenzorg. The Forestry Bureau situated at Batavia and having charge of the government forests is also an independent institution, although all of the botanical work of that office is done at the department by Drs. Koorders and Valeton. These independent investigations form only a very small part of the total investigations now being carried out in Java.



VIEW IN THE PALM SECTION.



METHOD OF LABELING SECTIONS AND THICKNESS OF PLANTING.



RIVER IN THE GARDEN.



ANOTHER VIEW OF THE RIVER IN THE GARDEN.



MAIN DRIVEWAY IN THE EXPERIMENT GARDEN.



YOUNG RUBBER PLANTS IN THE EXPERIMENT GARDEN.



GUTTA-PERCHA TREES IN THE EXPERIMENT GARDEN.



SHOWING THICKNESS OF PLANTING IN THE EXPERIMENT GARDEN.

# FAR EASTERN AGENCY OF THE KELLY SPRINGFIELD ROAD ROLLER COMPANY



TRACTION ENGINE DRAWING SIX 3-GANG DISC PLOWS, CUTTING STRIP 15 FT. WIDE.

Among the enterprising American manufacturing concerns that have substantially indicated their faith in the internal development of the Philippine Islands, is The Kelly Springfield Road Roller Company, whose general offices are located at 151-167 Muelle de la Reina, Manila, and whose agency in the Far East is under the direct supervision of Mr. C. E. Helvie. The primary object which prompted The Kelly Springfield Road Roller Company to bring into the Orient its great line of industrial machinery and agricultural implements has been the promising conditions in the Philippines, where hacenderos, planters, and farmers are developing a rapid and surprising desire to supplant the antiquated method of agriculture with the modern methods of the Western World. When Mr. Helvie returned to America early last spring, after a number of months spent in a careful survey of the territory, he went back prepared to offer inducements to the company he represents to invade the Far East with their manufactures on a scale never before attempted by any concern doing business in this line in the Philippines. Acting on his advice, which was backed by good previous business in machinery, the company boxed up and shipped to Manila forty-five carloads of agricultural machinery of every description which could be utilized in tropical countries, with the result that today Mr. Helvie is receiving an immense amount of correspondence from the leading Hacienda and

a large warehouse in Calle Principe, within a stone's throw of his offices, and is now busily engaged in setting up the machinery

ern offices in Manila was the central location of this city as a shipping point to other parts of the Orient. It is the aim of the company to



STEAM ROAD ROLLER, CAPACITY 10 TO 20 TONS.

for the inspection of the general public. The object of The Kelly Springfield Road Roller Company in establishing its agency in the Far

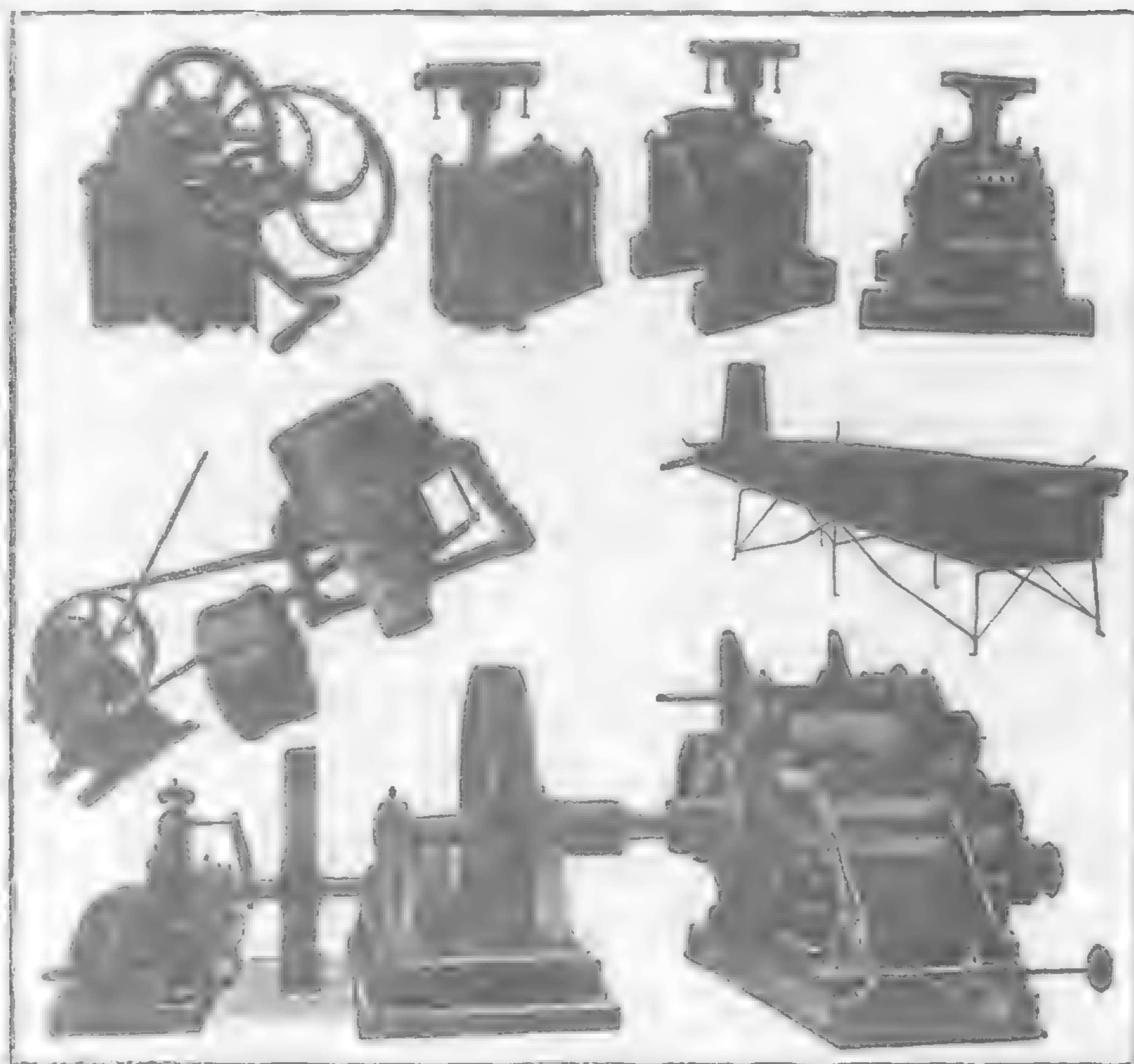
in invade the other countries of the Orient with their line of agricultural machinery, and to



STEAM ROAD ROLLER, CAPACITY 2½ TO 10 TONS.



STEAM ROAD ROLLER, REAR VIEW.



MACHINERY FOR SUGAR PLANTATION.

Springfield Road Roller Company is among the pioneer American manufacturers of agricultural machinery in the Philippines, and it has the reputation of liberal dealing in its line. Mr. Helvie has already sold much machinery to the native agriculturalists, in addition to large orders filled for the insular government. Besides agricultural machinery Mr. Helvie's agency handles machinery of every other description and for nearly every other purpose.

A LARGE VARIETY OF LINES.—Following is a partial list of machinery which Mr. Helvie's agency is prepared to supply promptly upon demand at prices which are moderate and within reach of all:—



CANE MILL.

Windmills for irrigation; modern farm plants; small city waterworks; concrete mixers; tar tanks; Kelly cable plowing outfit; Kelly rubber tires and wheels; road building and maintaining machinery; rice threshing, hulling and polishing machinery; elevators, screens and bins; rock crushers of all sizes; tramways and cars; street sweepers and sprinklers; stone wagons; garbage carts; dump cars, track iron, switches and turning tables; wagon loaders, road builders and ditching machines; wheeled scrapers, tile ditchers and sewer builders;



RICE HULLER AND POLISHER.

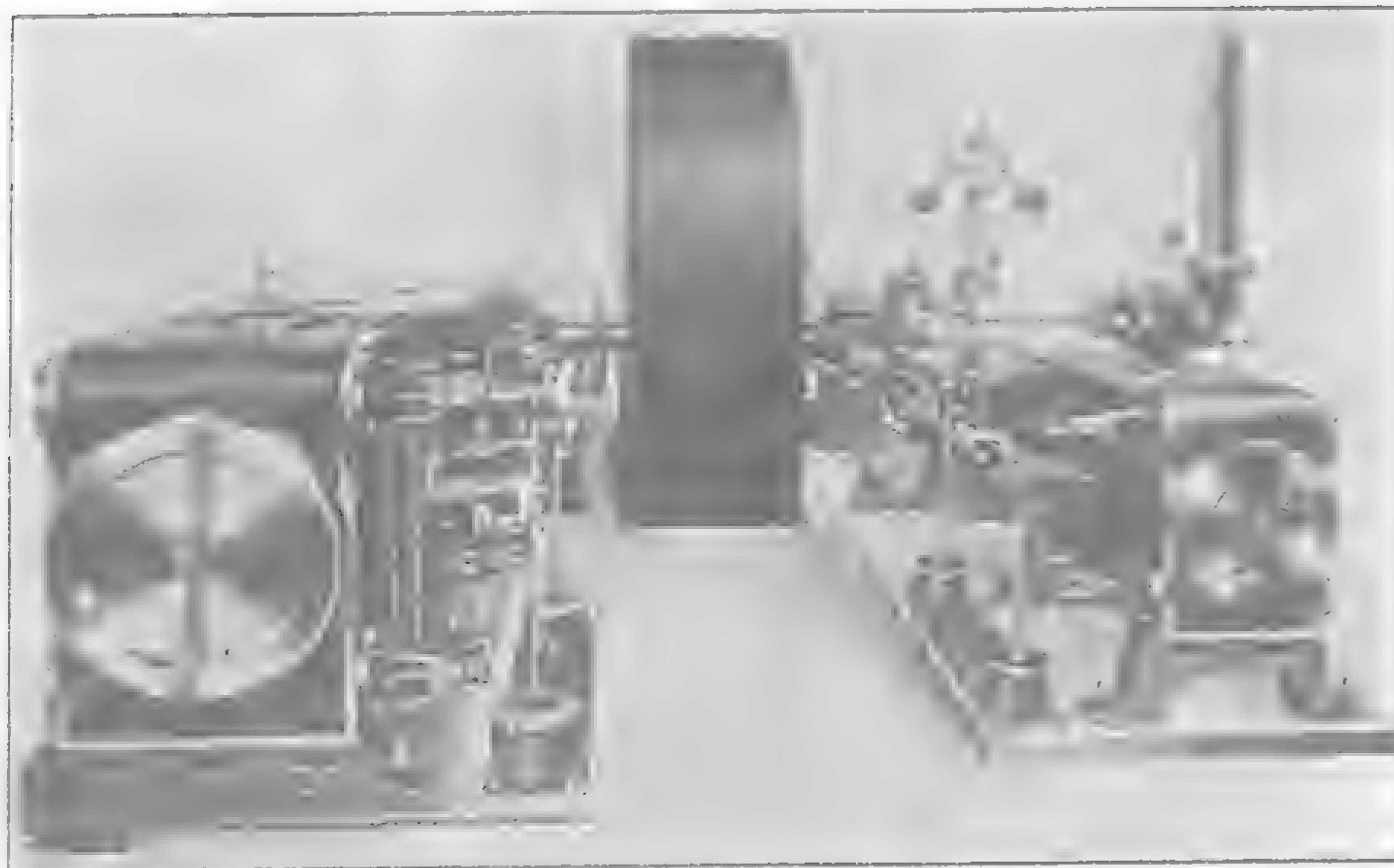
well machinery; hand sweepers for streets; hand garbage carts; windmills for farm purposes; spring drays; steam pumps; farm carts; railroad carts; carabao cart wheels and carts complete; all sizes of locomotives for plantations, custom houses, public works; large locomotives for railroads; rock drills; coal cutters; stone channeling machines; complete mining, tunneling and quarrying plants; forges; blowers; drills; all kinds of tools;

derricks of all kinds for harbor improvements, custom house docks, buildings, railway and bridge construction; threshing machines; stationary engines and boilers; refrigerating and ice-making plants; sugar machinery of every description; coal and wood-burning traction and portable engines; straw-burning traction and portable engines; bean and pea threshers and cleaners, horse-powers; steam plowing engines; road locomotives for hauling freight; heavy cars for hauling logs, ore, or stone; cultivators and planters; separators, etc.



CENTRIFUGAL PUMP.

SPECIALTIES IN MACHINERY.—Mr. Helvie's agency is making a specialty of steam plows, traction engines, sugar and rice machinery, windmills and other plantation machinery in the Philippines. He was the first person to introduce the steam plow to the Filipinos, and it has met with such uniform success everywhere it has been tried that it promises to find general popularity among the great hacenderos, planters, and farmers of the Islands. Experiments with the steam plow were first made by the insular government



CROSS COMPOUND ENGINE WITH GIRDER FRAMES.

under the Chief of the Bureau of Agriculture, and they attracted widespread attention. The government started the demand for them by purchasing several for the agricultural farms which have been established throughout the Islands, and then came the demand from private individuals.

Other machinery suitable for working up large tracts of land and handling their cultivated products followed close in the wake of the steam plow, and a surprising but most satisfactory and encouraging fact develops that the Filipinos are not only alive to the necessity of improved methods in agriculture, but that they are taking enthusiastically and with noticeable aptitude to improved machinery.

**THE WINDMILL.**—There seems to be little doubt but that the introduction of the windmill into the agricultural field of the Far East is an important part of agricultural progress. Owing to the air currents of the tropics and other conditions of the elements which, when utilized as a power by means of windmill transmission, is reliable and satisfactory. As an economical power there is no expense, practically, after the first cost—the purchase and erection of the mill. The capacities of windmills are based on a wind

velocity of 15 ms. per hr., as this velocity is reached in all communities frequently. These capacities are calculated from practical results, and the mills which Mr. Helvie handles have been prepared after many experiments, with a view to the best daily results.

Irrigation windmills are of great importance in the tropics, and the question of a cheap but good irrigating plan is a great problem which Mr. Helvie's windmill irrigating system has solved. It is necessary to have a good steel windmill on a substantial tower operating a first-class pump of great capacity, and all of this the agency of The Springfield Road Roller Company can guarantee.

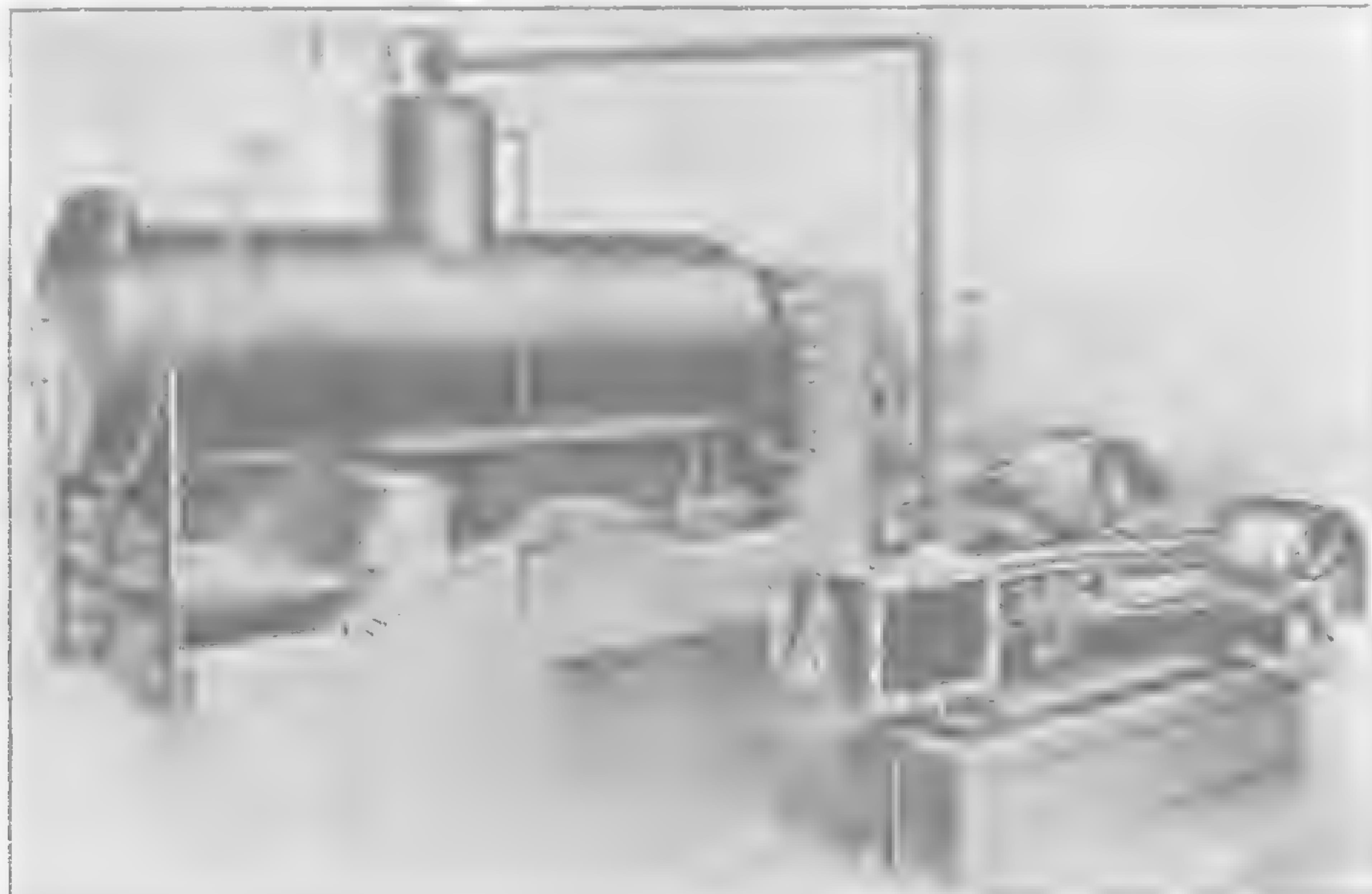
**THE CORLISS ENGINE.**—This famous engine as a power-distributer is a leading piece of machinery in the world's market today, and Mr. Helvie is prepared to supply it in any size.

**ICE-MAKING AND REFRIGERATING MACHINERY.**—Mr. Helvie is prepared to furnish this machinery in any capacity from  $\frac{1}{4}$  to 200 tons, and for service in moderate-sized cities and towns he can supply exactly what is needed. There are many provincial cities of the Philippines which, if they possessed ice-making and refrigerating plant, would support them well.

**RICE MACHINERY.**—An accompanying illustration shows a new form of rice huller and polisher which is sold by The Kelly Springfield Road Roller Company's agency in the Orient. It is claimed for the machine that it not only hulls the rice, but at the same time gives it a fair amount of polish, and has the additional advantage of being equipped with a fan attachment which removes all the chaff.

The working parts of the machine are made of iron and steel, and the grinding surfaces are of a specially prepared grade of hard steel. The lower concaves are hinged in such a way that the interior of the machine may be easily examined at any time. The machine is so arranged that by the removal of a small screen it can be converted into a very efficient coffee huller. When it is arranged as a coffee huller, however, the product does not pass through the polisher, but is passed through the auxiliary gate. This auxiliary gate is so arranged that a sample of the work being done by the huller may be obtained at any time.

The machine is rigidly built throughout and is designed to endure hard and conti-

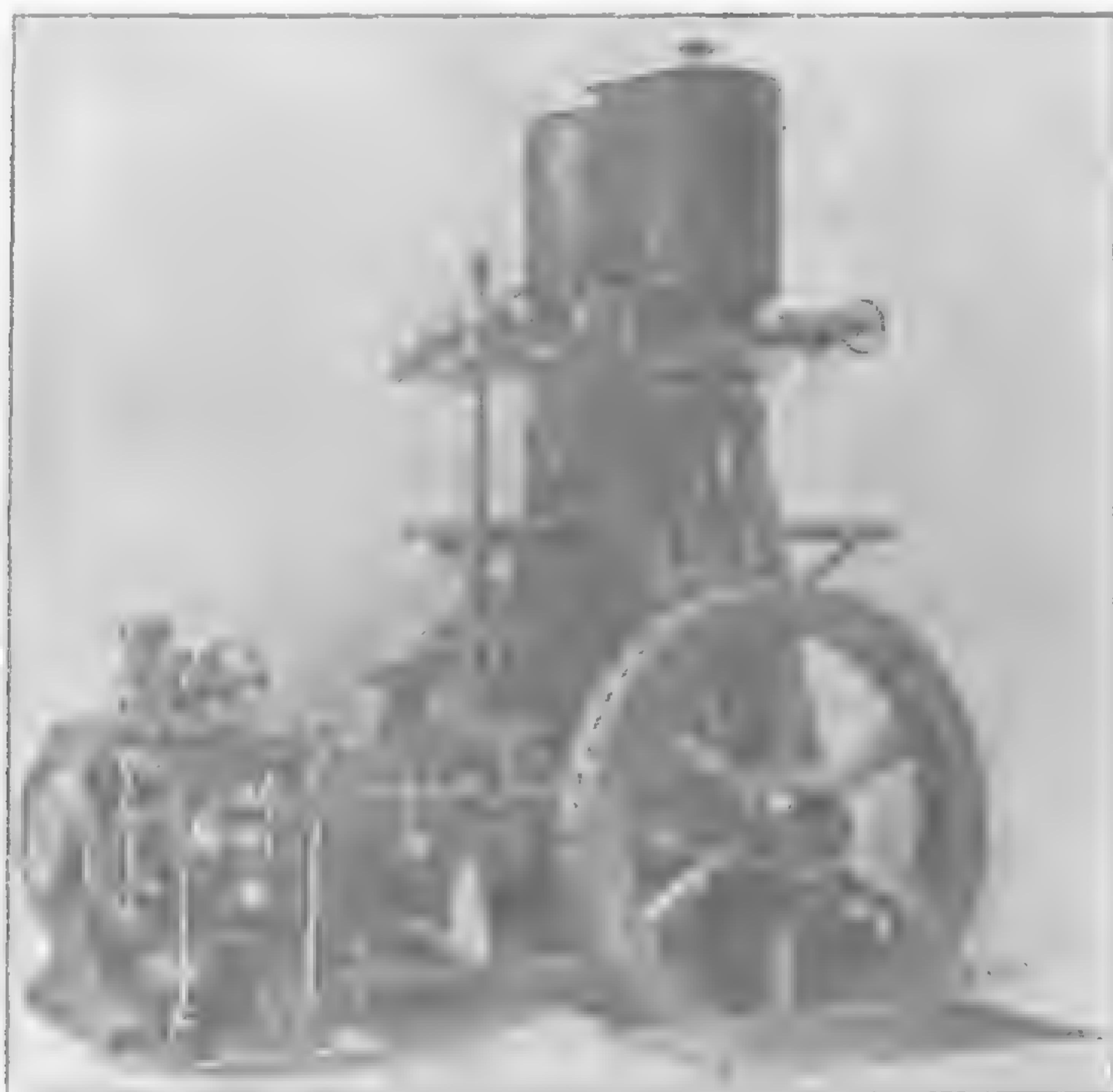


STATIONARY ENGINE AND TUBULAR BOILER, SHOWING HALF ARCH FRONT SETTING.

nuous use. It weighs about 900 lbs. set up and will hull and clean about 6,000 lbs. of rice in 12 hrs.

and deep, containing on the inside an agitator which prevents clogging.

The hull cylinder is 5 ins. in diameter,



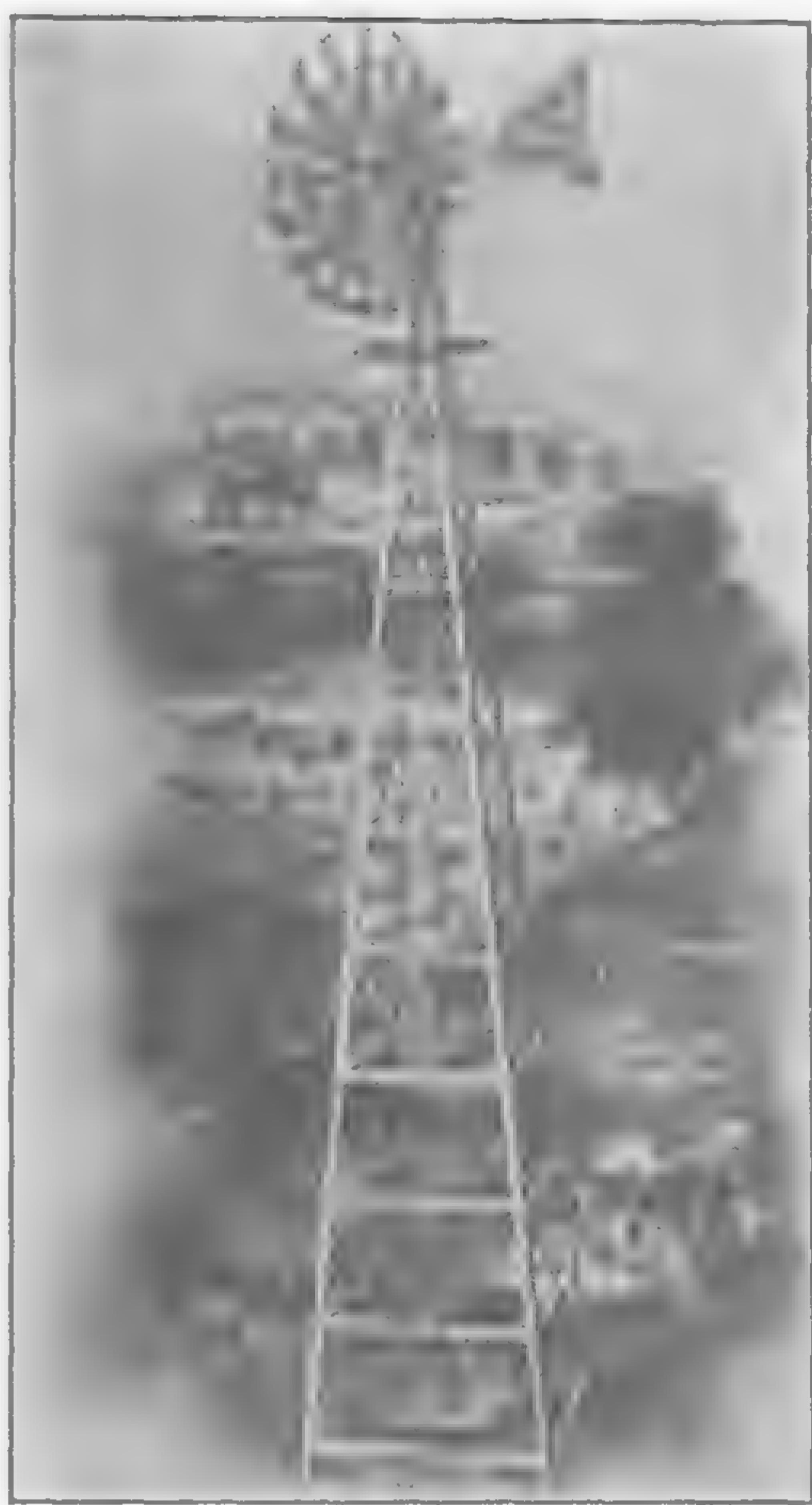
ICE-MAKING AND REFRIGERATING PLANT.

From 6 to 9 h. p. is required to operate the machine, and the floor-space occupied is 36 by 40 ins.

The hopper is made of steel and is large

17 $\frac{1}{2}$  ins. long and operates at the rate of 500 r. p. m.

The chaff fan has a 9-in. blast wheel and an outlet 4 3 $\frac{1}{16}$  ins.



GALVANIZED STEEL BACK-GEARED WINDMILL  
AND GALVANIZED STEEL TOWER.

# Oriental Construction Co

C. W. MEAD, C. E.  
President and Shanghai Manager.

N. M. HOLMES, C. E.  
Vice-President and Hongkong Manager.

A. F. CARRICK, C. E.  
General Manager, Manila.

Cable Address:  
'Werrick'

Codes Used:  
A. B. C., 5th Edition, and  
Western Union

## Consulting and Supervising Engineers and Contractors

This Company is Prepared to Undertake All Kinds of Construction Work, Particularly in the Line of Railway, Hydraulic, Mining and Sanitary Engineering.

We will Make Complete Surveys, Reports and Estimates on any Railway Proposition, or will Contract to Construct the Same in Section or in Whole.

We will Examine and Report Upon Mines or Any Proposed Construction Work.

Our System of Reinforced Concrete and Concrete Piles Should Be Consulted By Those Contemplating the Erection of Any Kind of Structure.

SHANGHAI OFFICE:  
4a Peking Road.

HONGKONG OFFICE:  
Room 2, Alexandra Bldgs.

# FAR EASTERN ENGINEERING, CONSTRUCTION COMMERCIAL AND FINANCIAL, NEWS

## PERSONAL.

TS'AI NAIHUA, a Szechuan *taotai*, has been appointed adviser to the *Shangpu*, or Chinese Board of Commerce.

MESSRS. ARNHOLD, KARBERG & CO. have been appointed local agents of the Russo-Chinese Bank, at Nanchang, Manchuria.

MR. CHARLES S. LEAVENWORTH, the newly appointed deputy and vice-American consul at Nagasaki, has assumed his official duties.

MR. WILBUR T. GRACEY, once in charge of the American consulate at Foochow and latterly that at Nanking, has been appointed vice-consul at Hongkong.

MR. ROGER S. GREENE, American vice-consul at Kobe has been appointed commercial agent at Vladivostok, succeeding Mr. R. T. Greene. The post is equivalent to a consulate, the Russian Government not allowing consuls at this Siberian port.

MR. J. H. WALLACE, chief engineer of maintenance of way of the Southern Pacific Railway, who was investigating the railway possibilities of the Philippines in the Hartman interests, has now gone to Korea and Manchuria as a sequel to Mr. Hartman's recent visit to those countries.

TAOTAI JEME TIEN-YOU, a graduate of Yale University, Sheffield Scientific Department, A. M. I. C. E., London, and superintendent engineer of the Peking-Changchakou (Kalgan) Railway, now in course of construction, has been appointed by the Chinese Board of Commerce as special adviser on railway matters to that board.

MR. DE RIJKE, a well-known civil engineer, has accepted an invitation from the Chinese Government to come out to the Orient from Europe and take charge of the Whangpu conservancy operations at Shanghai, for the improvement of the Whangpu River and Woosung Bar. It is understood that the Chinese Government has promised to appoint a French and a Japanese civil engineer to assist Mr. de Rijke.

MR. HAMILTON WRIGHT, special commissioner for the United States Commercial Museum in the Orient, has arrived in the Far East and is at present making an extensive tour of the Philippine Islands. He will make a report of the agricultural condition of the Philippines and furnish newspaper articles to a syndicate of American papers and magazines. He is authorized to gather such information and data, statistics and exhibits as will assist in bringing about closer relations between the Orient and the Pacific Coast of America. The exhibits will all be shipped to the Pacific Commercial Museum with the accompanying data, so that any merchant and manufacturer may see what goods are consumed in the Islands and what they are sold at and exactly how they are put up for customers here, as well as other valuable information. He will also visit China, Japan, Java, Sumatra, and the Straits Settlements with the same object in view.

## RAILWAYS, SUPPLIES, ETC.

SOOCHOW-HANGCHOW-NINGPO RAILWAY, CHINA.—It is announced that the Peking Government has asked the British minister to fix a date for the cancelling of the Soochow-Hangchow-Ningpo Railway concession.

ROYAL RAILWAYS, SIAM.—The construction of the Petrew branch of the Royal Siamese Railways, officially known as the "Eastern Line," has been commenced.

PEKING-KALGAN LINE.—The chief engineer of this railway has assessed the cost of construction at Tls. 7,291,800, and this has been reported to the Peking authorities for approval.

PROJECTED CHENGTEFU-PEKING RAILWAY.—The Military Governor of Ye-he, Sungshou, is having a survey made of a proposed railway from Chengtefu to Peking. There are rich repositories of gold and silver in this district.

ANNAM RAILWAY EXTENSION.—It is reported that the Chinese Government has granted a French concession for the extension of the Annam Railway to the Yunnan boundary, and that construction is to begin immediately.

SINTEHFU-PEKING ROUTE.—The commandant of Iho is making a survey of the route from Sintehfu to Peking. This is at present an important trade route, and, owing to the mineral wealth in its vicinity, he is of opinion that the construction of this railway should be proceeded with at once.

TRUNK RAILWAY FOR CHINA.—According to London advices the Chinese Government is planning the construction of a trunk railway which shall traverse the 3 central provinces of the empire, and shall connect Canton with Peking. The Canton-to-Hankow Railway form the S. part of the line.

FRENCH AND CHINA RAILWAYS.—It is reported that the French minister at Peking is urging the Chinese Government to grant to French subjects railway concessions at least to the extent that they have already been granted to British subjects. The viceroy at Canton is opposed to the present scheme for the Canton-Kuangchouwan Railway, which is partly a foreign enterprise. The French concessionaries are taking steps to safeguard their interests.

SHANGHAI-NANKING RAILWAY.—The first 12 ms. of the Shanghai-Nanking Railway, from Woosung to Nazing, have been formally opened to traffic. Grading on this section was begun about 1 yr. ago. It is single-tracked, nearly straight, and has only one small bridge and a few culverts which have made it very easy of construction. The cost must have been moderate, although the Chinese charge this company with gross extravagances.

PEKING-HANKOW RAILWAY.—The journey from Peking to Hankow over the railway which has just been completed takes 36 hrs. This line heretofore known as the "Lu-Han" (Lu-known-ch'iao, referring to the classic bridge of Marco Polo, about 15 ms. SW. of Peking, the "Han" standing for Hankow) will from now be called "Ching Han" Railway ("Ching" meaning capital). The total cost of construction has been Tls. 50,000,000.

CHINESE EASTERN RAILWAY, MANCHURIA.—The length of the Chinese Eastern Railway from Changchung to Port Arthur, which has been acquired by Japan, is over 300 ms., and the working expenditure of this section amounts to Y-220,000 per mo., maintenance costing Y-15 per m. per day. At present, says the *Jiji* it is very difficult to obtain a revenue of only Y-120,000 per mo., and by working the railway the Japanese Government, at present, will lose at least Y-100,000 per mo.

SHANTUNG RAILWAY.—The offices and line of the Shantung Railway have been handed over to the Chinese. This line—from Tsingtao to Chinan, the provincial capital of Shantung—was completed by the Germans in 1903, and several trains a day are now running over the stretch of about 250 ms. Its earning capacity quickly showed excellent results, both as regards freight and passengers, and it is estimated that it will shortly supply Weishien, Chouts'un and Chinan, the largest 3 trading centers in the province, with something like \$3,000,000 worth of foreign freight per annum. The Chinese Government has already opened these 3 places to international trade, and, in the near future, the railway ought to absorb the whole trade of central and N. Shantung—provided, of course, as the Hongkong Telegraph explains, rates are kept lower than water transport rates from Chefoo.

BRITISH AND CHINESE CORPORATION.—Commenting on the present agitation for Chinese control of the railways of the Chinese Eastern Railway, the British and Chinese Corporation has not violated any of the provisions of the agreement as in the case of the American-Canadian Pacific.

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this is being pushed with rapidity along the Ba-gumbayan Drive. The site for the central station is also being cleared. It is necessary here to raze a substantial building that has been standing there for years to make place for the modern concrete and steel structure which will house the operating appliances and general offices of the telephone company.

MESSRS. ARNHOLD, KARBERG & CO.—In a recent issue of THE FAR EASTERN REVIEW—the October number—this paper was made to say that Messrs. Arnhold Karberg & Co., whose commercial enterprise cover the most important trade centers of China, are agents for the Marconi system of wireless telegraphy. This was an error. The firm represents the Wireless Telegraphic Company of Berlin (System Telefunken), which it claims to be far ahead of the Marconi system. THE REVIEW takes pleasure in setting this slight inaccuracy right in justice to the business interests of Messrs. Arnhold, Karberg & Co.

DIRECT CABLE TO JAPAN.—The Commercial Pacific Cable Company, through its president, Clarence H. Mackay, announces that it has secured the necessary concessions to enter Yokohama, Japan, and Shanghai, China. M. Takahira, the Japanese minister to the United States, has affixed his signature to Japan's agreement with the Commercial Pacific Cable Company for landing rights at Yokohama. An agreement for landing rights at Shanghai was signed by China several weeks ago. The cable connections with both Japan and China will be made by extending the present lines of the company, which run from San Francisco through the stations at Honolulu and Guam to Manila. Japan will be reached by laying a cable from Guam in the Pacific Ocean direct to Yokohama. The cable to China will be laid from Manila to Shanghai. Mr. Mackay says the company will proceed at once with the manufacture and laying of these two cables, which will take several mos. The Commercial Pacific Cable Company will then pierce the Far East at three points, namely, the Philippines, China, and Japan. With the cable which has just been completed to Newfoundland, plus a fifth cable to Europe, and the cable from Guam to Japan, and one from Manila to Shanghai, the company will have a system extending over two-thirds of the way around the globe.

## WATERWORKS AND IRRIGATION

WATERWORKS, MOJI, JAPAN.—Waterworks to cost \$50,000 are to be constructed at Moji.

WATERWORKS AT CANTON, CHINA.—The construction of the waterworks system for Canton has just been commenced. Three engineers from Shanghai are in charge of the work.

HONGKONG WATER SUPPLY.—The control of the Hongkong water supply by the "rider" main system is being rapidly pushed ahead. Another extensive area in the W. part of the city is now being operated by the system.

GRAVITY WATER SUPPLY, MANILA, P. I.—Mr. J. F. Case, M. Am. Soc. C. E., Chief Engineer, Department of Sewer and Waterworks Construction, Manila, reports that the construction of the new wagon road, along the line of the pipe line and conduit of the gravity water supply is practically finished. About 800 men were employed on the work, which was done by day labor. In the gorge below the site of the new dam the road required some heavy rock work, but this was completed about December 10th. This opened the road throughout its entire length.

CANTON'S WATER SUPPLY.—The Canton (China) correspondent of a Shanghai paper says:—"Trotai Chin and Chan have been appointed to represent the government in looking after the interests in the Canton waterworks, and His Excellency Chang Ynt Shih will represent the other shareholders. It is reported that a foreign firm approached the Board of Commerce recently, submitting a scheme and other regulations and expressing a desire to put in some capital. The firm, it is reported, was prepared to subscribe \$1,000,000 or \$1,500,000, whichever amount suited the Chinese shareholders. The Board of Commerce replied that as sufficient money could be obtained from the Chinese it was not necessary to borrow from foreigners. The firm also recommended several engineers for the works to which the board replied that the viceroy already wired to a certain engineer at Shanghai and that the gentleman was expected in a day or two. The preliminary survey has been completed, and it is estimated that at 2 cash for 2 buckets of water, the capital would yield 500 per cent annually."

## BRIDGES

BRIDGE SITE, MANILA.—A stretch of land for the construction of the foundations of the new Ayala Bridge, to span the Pasig River, has been expropriated by the government. The Atlantic, Gulf and Pacific Company are the contractors.

"BIRTHDAY BRIDGE," SIAM.—Messrs. Howarth Erskine, Ltd., of Singapore, made the ironwork for the new "Birthday Bridge," Bangkok. The design is reported to be a novel and tasteful one, and forms a good example of the ironworkers' art and handicraft. This year the bridge was built out Sapatoomrd, near Prince Suan's palace.

## PUBLIC WORKS

RECLAMATION OF WASTE LANDS, CHINA.—A central office having charge of the reclamation of waste lands will soon be established at Peking. The staff will be composed of officers appointed from the various imperial boards.

**LUNETA EXTENSION, MANILA.**—The bulkhead for that part of the Luneta extension upon which the new hotel is to stand is being constructed with great rapidity by the Atlantic, Gulf and Pacific Company. In a very short time the work of reclaiming the site will begin, the company's powerful dredger *Manila* being ready for the work.

**PUBLIC WORKS DEPARTMENT, STRAITS SETTLEMENTS.**—The annual report on the Public Works Department of the Straits Settlements, recently issued, shows that in 1904 the total expenditure in each settlement for public improvements was as follows:—Singapore, \$1,369,011; Penang (including Province Wellesley and the Dindings), \$763,270.50; Malacca, \$245,557.05. Total, \$2,367,869.15.

**SEWER AND WATERWORKS CONSTRUCTION, MANILA.**—The Municipal Board of the City of Manila has taken steps to secure free entry through the customs of the imported materials for the construction of the new water and sewer systems of the city. Acting Governor-General Ide has brought the matter to the attention of the Collector of Customs for the Philippine Islands, Mr. W. Morgan Shuster, with request to comply with the provisions of the act of the Philippine Commission granting this privilege.

**SEWERS, MANILA, P. I.**—The underground survey of the city of Manila has been completed by the Department of Sewer and Waterworks Construction. This work was undertaken to determine the location of old sewers, drain pipes, etc., placed in the streets during Spanish domination and of which no records could be found. As fast as located these old installations were plotted on the block maps prepared by the department, and are now available for examination by intending bidders on the new sewer system.

#### PORT WORKS, DREDGING, DOCKS, ETC.

**ANOTHER DOCK, SHANGHAI.**—British merchants are negotiating to purchase a large tract of land at Yangtze-pu, Shanghai, for the purpose of starting a dock.

**PORT OF HAICHOU, CHINA.**—The Peking authorities have refused a request that a Britisher be appointed to take charge of the engineering department of the new open port of Haichou.

**NAVY DOCK, BANGKOK.**—The dock at the Navy Yard in Bangkok, which is now being reconstructed, is being relined with stone and iron concrete in place of wood. The work is expected to be completed about the middle of February next. The dock will then measure 300 ft. in length and 45 ft. in width, with 16 ft. on the sill at high water.

#### SHIPBUILDING, MARINE, ETC.

**LAUNCHING AT BANGKOK.**—The Siam Forest Company's new launch *Devraj* has been successfully launched by the Bangkok Dock Company, Ltd.

**NEW JAPANESE CRUISERS.**—The 1st-class armored cruiser, which will be launched the current month from the Kure Naval Dock, will be named *Tsukuba*, and another which will be launched at the same dock later on will be called *Ikoma*.

**A LIQUID FUEL BURNER.**—The British steamer *Stettin* arrived in Manila the fore part of the current month from Sumatra with a large shipment of case oil consigned to a local firm. This vessel is owned by the R. S. Freeman, Shanghai, and is one of the few ocean-going carriers in Oriental waters that burns liquid fuel.

**MESSAGERIES MARITIMES INCLUDES MANILA.**—Messageries Maritimes, the great French steamship company, has extended its service to Manila and the Philippines. *Annon* was the first vessel of the company to arrive at Manila, coming into port early in December direct from Kobe, and sailing for Europe via Singapore and the Suez.

**OPENING OF LU HAN RAILWAY, CHINA.**—The Lu Han Railway, connecting Peking with Hankow, has been officially opened. The ceremony took place on the great bridge over the Hoangho (Yellow River), Monday, November 13th. The bridge lies, roughly, about the middle of the line. Trains are now running regularly in both directions.

**NEW TRANSPACIFIC RECORDS.**—The Pacific Mail Steamship Company has been creating new records lately. *Siberia* made the voyage from San Francisco to Honolulu in 4 d. 19 hrs. 15 mins., and *Korea* has run from Yokohama to San Francisco in 10 d. 11 hrs., the fastest time on record. Messrs. Castle Bros.-Wolf and Sons are Manila agents for this company.

**LAUNCH OF IRON LIGHTER.**—Messrs. Howarth Erskine, Ltd., have launched the first of 5 iron lighters which they are building. The size of the lighter is 105 ft. long by 23 ft. beam, with 9 ft. draught, and the carrying capacity is 300 tons. The others of the same size are, another one for the Arracan Company, 2 for the Borneo Company, Ltd., and 1 for another client.

**REFLOATING RUSSIAN WARSHIPS, PORT ARTHUR.**—The Russian gunboats *Gaidamak* and *Posadnik*, which were sunk at Port Arthur, have recently been refloated. They have recently been named *Shikinami* and *Makigumo*. The only sunken vessels now at Port Arthur are *Razboinik*, 1,492 tons; *Djigil*, 1,331; *Zabuika*, 1,286; *Bobre*, 950, and *Amur*, 2,380. The number of Russian vessels refloated up to the end of October is 18.

**STEAMER KAIPING.**—The Chinese Engineering and Mining Company's splendid new steamer *Kaiping*, built at Wallsend-on-Tyne, arrived in Oriental waters recently in command of Captain Macfarlane. She brought out a cargo of iron for Japan and behaved herself handsomely during the voyage. She is one of the most up-to-date vessels now on the China Coast, and is a valuable acquisition for the rapidly increasing trade of the Chinese Engineering and Mining Company.

**LAUNCH OF A JAPANESE LINER.**—The Kawasaki Dock-yard Company, Kobe, has successfully launched *Kaijo-maru*, a vessel which will soon fly the flag of the Osaka Shosen Kaisha, Ltd. This vessel has a length of 280 ft., a breadth of 39 ft., and a depth of 23 ft. She has a draught of 17 ft., a displacement of 3,570 tons, a gross tonnage of 2,100 tons, and her triple-expansion engines will develop a speed of 13½ knots an hr., with a h. p. of 23,000. She will have accommodation for 280 passengers—20 1st-class, 30 2d-class, and 230 3d-class.

**JAPANESE SHIOPWNERS CONFER.**—At a conference of the Japanese Shipowners' Association in Tokyo, recently, a resolution was passed for the establishment, if such a measure proves necessary, of joint agencies at Hongkong, Shanghai, and Singapore, and the payment of a subsidy of Y-6,000 per year the ships navigating to those ports. The report submitted to the conference showed that the number of vessels represented by the association is now 175, representing 315,972 tons. Of these 120 vessels, representing 234,235 tons, were chartered by the Japanese Government during the war.

**BLUE FUNNEL LINE SHIPPING EXPANSION.**—According to *The South China Morning Post*, the Blue Funnel Line, which now operates over 40 steamers, is building 5 vessels, 1 of which will be larger than the Hill liners *Minnesola* and *Dakota*. Trade with British Columbia, Puget Sound, and the Orient is growing so rapidly that the company has decided to place the new steamers on this run. The largest of the new steamers will have a displacement of more than 33,000 tons. The other 4 will not be so large as this one, but they will all be far larger than the ordinary Oriental freighters. They are being built in Glasgow and London, and it is said some of them will be launched in 1906. The *Machaon*, of the Blue Funnel Line, has a displacement of 13,000 tons, but compared with the new steamers she will look like a tugboat. All the new vessels are being built on the cantilever plan, acknowledged by marine experts to be the strongest and most convenient method of ship building.

**LLOYD'S REGISTER OF SHIPPING FOR YEAR ENDED JUNE 30TH, 1905.**—The report of this society for the period indicated throws much light upon the advances which have been made in shipbuilding and marine engineering, as well as upon the present condition of the shipping industry in general. The gradual improvement which has taken place in freights has no doubt contributed to the substantial increase in the aggregate tonnage of the vessels which have been built under survey during the period in question for classification in Lloyd's Register Book, the total being 1,200,827 tons. The fact that, while the tonnage mentioned is an increase of about 120,000 tons over the corresponding figure for the previous year, the number of vessels represented is actually smaller, draws attention to the continued tendency towards the building of still larger vessels. Thus there are included in this total no fewer than 21 steamers of over 5,000 tons each, amongst which the largest are two of over 20,000 tons each, one of over 19,000 tons, and one of over 13,000 tons, built for the Great Northern Steamship Company, the Cunard Steamship Company, Limited, and the Pacific Mail Steamship Company, respectively. Among the types of vessels classed by Lloyd's Register during the year may be mentioned bulk-oil carriers, steamers to burn liquid fuel, trunk-deck and turret-deck steamers, and the now almost familiar turbine steamers. While the declaration of peace in the Far East is probably too recent to have affected the output of tonnage completed during the period under review, intelligent anticipation of this event is, perhaps, partly responsible for the fact that on June 30th last the total tonnage building under the inspection of the society's surveyors reached the very large total of 1,123,678 tons, as compared with 901,811 tons 12 mos. previously—an increase of nearly 25 per cent.

#### MINES AND MINING

**HWANG-HAI-DO GOLD MINE, KOREA.**—Japan has withdrawn from the scheme for working this property, originally proposed by Japan, Great Britain and America.

**COAL DISCOVERY, CHINA.**—A seam of coal 1 ft. thick at a depth of 491 ft. has been struck on the property of the Peking Syndicate, Ltd. The main seam underlies at a depth of from 40 ft. to 100 ft.

**GOLD DISCOVERY, KOREA.**—It is reported that a promising gold deposit has been discovered at Syung-chun, about 35 ms. to the NE. of Hamhung, Korea, and that efforts are being made by the Japanese to obtain a license to work the mine.

**EXPERT INSPECTION OF MINES, CHINA.**—The Peking Government has sanctioned the memorial endorsing the desire of Viceroy Chou Tu to despatch experts to inspect and report upon the mines in Kiangsu, Kiangsi, and Anhui.

**MINING ENTERPRISE IN KOREA.**—The Korean Government has been requested by the Japanese to grant permission to Baron Shibusawa and another Japanese to work the gold mine at Hamhung, in Hamgyongdo; and Messrs. Mitsui and Kobayashi the copper mine at Kosan, in the same province.

**PRODUCTION OF TIN.**—The world's output of tin in 1904 amounted approximately to 92,243 tons, of which the Federated Malay States supplied 58,657 tons and Australia 5,082 tons. The Federated Malay States heads the list in the quantity produced with many tons to spare. This country has led in the tin-mining industry since 1902.

**OPPOSITION TO PEKING SYNDICATE.**—It is announced that the Governor of Honan Province, China, has written both to the Board of Foreign Affairs and the Board of Commerce opposing the proposed opening up of certain iron deposits in the Prefecture of Huai-ching-fu, in that province, by the Peking Syndicate, giving as his reasons certain clauses in the imperial mining regulations.

**MINES IN KUANGSI, CHINA.**—It is reported that negotiations are proceeding between China and France regarding mines and railways in the Province of Kuangsi. It is proposed by the French minister at Peking that the mining and railway enterprises in the province should be undertaken by China and France jointly, and he has assured the Peking Government that the French Government would then be willing to remit 3/10 of the annual installment of the Boxer indemnity. Mr. Chazalon, a French merchant, is engineering the scheme.

**KOLAR GOLD FIELDS, INDIA.**—Following are the returns for the month of October, 1905:—*Balaghat*, 4,200 tons of quartz crushed yielded 3,378 oz. and 2,750 tons of tailings cyanided yielded 289 oz. Total, 3,867 oz. gold. *Champion Reef*—Milled 19,650 tons, which produced 15,606 oz. of gold. 16,950 tons of tailings treated by the cyanide process produced 2,195 oz. of gold, making a total production of 17,801 oz. gold. *Mysore*,—16,750 tons of quartz crushed produced 15,189 oz. gold, and 13,725 tons of tailings cyanided yielded 2,114 oz. Total production 17,803 oz. gold. *Mysore West*,—Mill ran 684 hours, crushed 2,152 tons, and yielded 1,026 oz. bar gold; 2,688 tons of tailings treated by the cyanide process yielded 129 oz. of standard gold. *Nundydrog*,—6,800 tons of quartz crushed yielded 5,200 oz. and 7,020 tons of tailings cyanided yielded 616 oz., total 5,816 oz. of gold. *Oore-gum*,—Stuff crushed 10,595 tons, gold produced 4,578 oz. and slimes and tailings cyanided 10,098 tons gold produced 969 oz. Total 5,545 oz. of gold. *Hut's* (Nizam's)—821 oz. of gold from 2,150 tons of quartz crushed, and 183 oz. from 1,600 tons of tailings cyanided, total 1,004 oz. gold.

**BORNEO OIL OUTPUT.**—Reports from the head office of the Nederlandsch Indische Industrie en Handel Maatschappij, covering the output of the oil fields in Borneo for the third 13 weeks and first 39 weeks of the years 1905 and 1904, show the following:

	Third 13 weeks. First 39 weeks.	1905	1904	1905	1904
Production—	Tons. Tons.	Tons.	Tons.	Tons.	Tons.
Crude oil	21,457	77,570	282,575	204,120	
Refinery intake—					
Crude oil	78,140	66,819	214,639	178,752	
Shipped elsewhere for refining	30,765	5,561	55,589	11,061	
Refinery output					
Kerosene	20,610	19,017	85,380	53,691	
Other products	39,701	41,460	109,596	102,911	
Shipments—					
Kerosene	25,278	17,413	85,694	50,638	
Other products	46,235	37,504	113,498	98,359	
Stock awaiting shipment—		Oct. 2, 1905	Oct. 1, 1904		
Kerosene	14,830		4,840		
Other products	8,600		12,200		
Crude oil in stock above ground	24,240		28,705		

**MINERAL DEPOSITS IN MANCHURIA.**—The American consul at Newchwang, Mr. Sammons, makes the following report:—It is known that there are valuable mineral deposits in Manchuria. Coal has been mined for several years in a primitive way, and the operations of the Russians in this direction attracted attention near Mukden. Gold, both in quartz and placer, is found, as is copper, silver, and other minerals. But just what the field offers in the way of practical mining possibilities is, as yet, subject to careful investigation. Many agree, however, that Manchuria is one vast field of mines and rich farming and grazing lands. Indeed, some of the samples of ore promise fabulous results, but as a rule the question entering into the operation of, and as yet, indeed, the securing of title to, good properties are indefinite and too nebulous at this particular time to prove attractive to capital. With war at an end and ample and well-defined government regulations in force the exploitation of mining enterprises in Manchuria will be open to serious examination. The indications, or "croppings," certainly warrant thorough prospecting of undeveloped properties and expert opinions where capital seeks investment in mines that have a right to be called such. Manifestly all matters pertaining to the development of mining properties are practically at a standstill in Manchuria. In many parts of China, as well as in various countries of the world, there exists a belief that the mineral deposits of Manchuria are fabulously rich. This belief may, in part, be accounted for by the popular idea that an unknown mineral or gold district possesses great wealth.

#### MISCELLANEOUS NOTES.

**DE DION AGENCY, SIAM.**—It is announced that Messrs. Howarth Erskine, Ltd., of Singapore, have been appointed sole agents in Siam for the well-known De Dion motor cars. One De Dion and 3 Beeston-Number cars are due to arrive there shortly.

**HEATING STOVES FOR CHINA.**—The Chinese are reported to be taking to foreign stoves for heating their houses. It is predicted that an immense trade in this line can be worked up in Manchuria, where the winters are long and very cold.

**COTTON CULTIVATION, KOREA.**—It is announced that the Korean Government, at the instance of the Japanese Government, will soon establish 30 cotton plantations in Cholla-do. During the next 3 yrs. Korea will disburse about -Y-100,000 as expenditure for the cultivation of cotton.

**STANDARD OIL IN MORO PROVINCE, P. I.**—The Standard Oil Company of New York is reported to have decided upon Zamboanga, Island of Mindanao, P. I., as a supply depot for the S. Islands of the Philippine Archipelago, and will erect a warehouse capable of holding 30,000 cases of oil, over the waters of the bay, opposite Calle Adoves, in Magay.

**AMALGAMATION OF MATCH FACTORIES, JAPAN.**—There is a plan on foot to amalgamate the principal match factories in Osaka and Kobe, which a committee is perfecting. The match factories of Osaka number 51 and produce an annual output representing about -Y-4,000,000 in value, while those of Kobe are 60 in number, with an output of the value of -Y-1,500,000.

**INSULAR CONTRACTS, MANILA.**—Major shields, chief of the Bureau of Supplies, Philippine Islands, has awarded a contract to Mariano Joquin for Metz metal involving an expenditure of P.16,000. Messrs. H. W. Peabody & Co. have also secured a contract to furnish the insular government with 17,000 ft. of galvanized iron pipe. The contract price is P17,000.

**SUGAR WAREHOUSES, HONGKONG.**—The colonial governor at Hongkong has directed that the godowns of the Hongkong and Kowloon Wharf and Godown Company, Ltd., situate at Kowloon shall be warehouses set apart for the storage of sugar in transit, under the regulations for the import and export of sugar in transit, under the Sugar Convention Ordinance, 1904.

**MESRS. FINDLAY & CO.'S BIG CONTRACT, PHILIPPINES.**—Messrs. Findlay & Co., of Manila, have been awarded the contract for supplying all the lumber, enses and windows to be used in the construction of the buildings at the Olongapo Navy Yard. This is the second large contract which this firm secured within a mo., bringing the total quantity of lumber to be supplied up to over 2,000,000 board ft.

**ENGINEERING PAPER FOR SIAM.**—The Engineering Society of Siam, with headquarters at Bangkok, has begun the publication of an official journal which has been entitled *Siam Engineering*. The journal is to be issued quarterly as an experiment, and if sufficient support be forthcoming it is proposed to enlarge its scope and to make it a monthly illustrated journal of a highly technical character.

**AGRICULTURAL MACHINERY, MANILA, P. I.**—Messrs. Castle Bros. Wolf & Sons, Manila, are importing into the Philippines an immense stock of the best agricultural machinery of American manufacture. The firm has secured large show-rooms at the corner of Calles Binondo and Barraca, Manila, in which to display their goods. Captain Thomas Leonard, manager of the Agricultural Department of the firm, is in personal charge of the show-rooms.

**OPENING OF MANCHURIA.**—The American minister at Peking recently paid a visit to the Chinese foreign office and made inquiries as to the opening of the 3 eastern provinces, and the date when the opening is likely to take place. Mr. Rockhill informed the officials that one reason why America endeavored to bring about peace between Japan and Russia was that she desired to see the development of trade in Manchuria. The Chinese replied that China has decided to open Manchuria to foreign trade, but the method of doing so is still under consideration.

**FERRO CONCRETE CONSTRUCTION, STRAITS SETTLEMENTS.**—Messrs. Riley, Hargreaves & Co., Ltd., engineers and contractors, Singapore, are erecting in Ferro Concrete for the Government of the Straits Settlements a large lighthouse at One Fathom Bank, Straits of Malacca. They are also erecting in Ferro Concrete two large bridges at Pandan and Gelang Rivers for the colonial government and the Municipality of Singapore. Messrs. Riley, Hargreaves & Co. hold the patent rights for this process of construction and are open to compete for buildings or erections of any kind.

**CHAMBER OF COMMERCE, NEWCHWANG.**—The Port of Newchwang now has a chamber of commerce for the first time in 50 yrs. The committee is composed of Mr. H. A. Bush, chairman; Mr. Ross Thomson, vice-chairman; Mr. O. Hoppe, manager of Messrs. Arnhold, Karberg & Co.; Mr. C. M. McCaslin, manager of the Standard Oil Company of New York, and Mr. J. Nakamura, manager of the Yokohama Specie Bank. Mr. H. F. Bush is honorary secretary. Captain G. Peacock represents the Newchwang Pilot Association in the New organization. All mercantile firms and persons engaged or interested in the commerce or shipping of China are eligible for admission as member, the annual subscription being Tls. 30.

**FAR EASTERN IRON AND STEEL TRADE.**—Far Eastern trade for iron and steel is very active in England at the present. From both Japan and China orders for workshop machinery on an unusually extensive scale are being received by every mail. Among other features of this demand is an order from China for a steelwork plant of so elaborate and complete a character, according to the *London and China Express*, that when set up it is likely to prove more efficient than many of the steel equipments in Sheffield.

itself. The specifications for this plant have been drawn up by a British engineer in the service of the Chinese Government, and orders have been given that no expense be spared in securing an installation as perfect as the best resources of Sheffield can make it.

**ALKALI IN CHINA.**—Special Agent Burrill gives out from Shanghai a report on the sale and use of alkalies in China. He explains that the entire business is practically in the hands of an English firm. Messrs. Brunner, Mond & Co., Ltd., of Northwich, Eng., have controlled absolutely the sale of alkalies in China since January, 1901. At that time this firm established a branch in Shanghai, and has run the Chinese product out of the market. By a business agreement among the English manufacturers of this material Messrs. Brunner, Mond & Co. are entitled for a period of years to sole representation in the Chinese market. The business, starting from nothing, has grown to large proportions. The firm's sales have reached 1,500 tons of all products, and rarely fall below 500 tons per mo., at an average price of approximately \$50 per ton.

**MACHINERY NEEDED AT AMOY.**—The American consul at Amoy, China, reports an opportunity to introduce windmills and rice hullers in the vicinity of Amoy, China, where rice is extensively raised but without the aid of labor-saving machinery. Here rice is hulled in the ancient way by the coolie who beats the hulls from the rice in a large mortar with a padded maul. Some of the large rice establishments use a beating contrivance in which the maul is at one end of a beam which the coolie works with his feet and weight, hulling about 150 lbs. per day. In the French possessions, S. China, windmills have been introduced to operate rice hulling devices, and they will doubtless soon be in use in Amoy where they would be favored by the steady winds. Here windmills could also be put into use for raising the water with which the rice fields are flooded.

**BANGKOK'S (SIAM) IMPORT AND EXPORT TRADE.**—The total value of the import and export trade of Bangkok, for 1904, according to official reports just issued, reached the unprecedented sum of £10,011,141 showing an increase of £2,582,901 over the figures of 1903, and £2,661,195 on the returns for the hitherto record year, 1902. The importation of steel, iron and machinery shows a remarkable increase, being at £370,392, considerably more than double either the sum for 1903 or the average for the past 5 yrs. The increase occurs in every item included under this sub-head, save in iron sheets and plates. It is principally in milling machinery, iron sheets and plates, bars and miscellaneous manufactures of steel that England has afforded the greater supply. The customs returns show that the increase in steel is due almost entirely to import of rails for the Royal Railway Department. Seven rice mills erected during the year, 5 replacing former mills and 2 being new ventures, account for the increase in machinery.

#### FINANCIAL NEWS.

**NETHERLANDS TRADING SOCIETY.**—It is reported that this concern is about to establish a branch of its bank at Hongkong.

**HONGKONG STEAM WATERBOAT COMPANY, LTD.**—This company announces that it will declare a dividend of 5 per cent for 1905.

**SIAM'S BUDGET, 1905-6.**—Estimate of revenue, Tcs. 53,000,000; expenditure chargeable to revenue Tcs. 52,873,083; surplus, Tcs. 126,917.

**KWANSEI RAILWAY COMPANY.**—It is reported that this company has successfully concluded negotiations for a foreign loan of -Y-10,000,000.

**JAPAN'S BUDGET, 1905-6.**—In Japan's 1905-6 budget the estimated surplus is \$45,938,890. This is nearly 3 times the surplus of any prior year in the history of Japan.

**DEUTSCHE-ASIATISCHE BANK.**—A branch of this bank, which has been doing business in China for a number of years, recently opened its first branch in Japan at Yokohama.

**CHINA TRADERS' INSURANCE COMPANY, LTD.**—The directors of this corporation have recommended the payment of a general dividend of 15 per cent (4.56 per share), and a bonus to contributors of 15 per cent.

**ORIENTAL TELEPHONE AND ELECTRIC COMPANY, LTD.**—Application has been made to the committee of the Stock Exchange, London, to allow the security of this company—£100,000 4 per cent redeemable debenture stock—to be quoted in the Official List.

**SIAM'S BUDGET, 1905-6.**—The budget issued for the Siamese year 124 (1905-6) estimates the revenue at £2,953,615 and the expenditures at £2,946,572. A sum of £323,229 is assigned to railway construction, but it will be charged to the loan recently negotiated.

**JAPAN AND CHINA SYNDICATE, LTD.**—Another recent registration is the Japan and China Syndicate, Ltd., which has a capital of £10,050 in 1,000 ordinary shares of £10 each and 1,000 deferred shares of 1s. each. It is formed to acquire lands, farms, mineral and other properties, concessions, and rights in Japan, China, and other parts of Asia or elsewhere.

**INDUSTRIAL BANK OF JAPAN.**—This financial institution intends to increase its share capital by -Y-17,500,000, making a total of -Y-17,500,000. The new shares, it is understood, will be taken up by a British syndicate

in London, with whom an agreement has been made by the bank, through Mr. Takahashi, vice-governor of the Bank of Japan. The scheme is yet subject to the approval of the shareholders of the bank.

**INDO-CHINA LOANS.**—In 1898 the Indo-China Government was authorized to issue loans amounting to fr. 200,000,000 for constructing railways. Of this fr. 50,000,000 are issued at 3½ per cent interest in 1899, and fr. 70,000,000 at 3 per cent in 1902. The balance of fr. 80,000,000 is about to be issued, like the others, through the Banque de l'Indo-Chine. The rate of interest for this issue, it is believed, will be 3½ per cent.

**SANYO RAILWAY COMPANY, JAPAN.**—At the general meeting of this corporation held recently in Kobe, the following accounts were passed by the shareholders:—Net profit, -Y-1,327,161; balance brought forward, -Y-674,140; total, -Y-2,601,301. To reserves, -Y-96,400; to rewards to officers, -Y-12,500; to dividend, 8 per cent per annum, -Y-1,224,970; to bonus to shareholders, 2 per cent per annum, -Y-306,190; carried forward, -Y-961,241.

**KANSAI RAILWAY COMPANY, JAPAN.**—At the recent general meeting of this company, held at Yokkaichi, the following accounts were approved, as was also the proposal of raising a foreign loan through the firm of Messrs. Samuel Samuel & Co.:—Net profit, -Y-721,583,764; balance brought forward, -Y-4,469,462; -Y-725,993,226. To reserves, -Y-37,000; to dividend 5.6 per cent per annum, -Y-677,090,400; carried to next account, -Y-11,902,826.

**NATIONAL BANK, BANGKOK.**—It is understood that a number of influential Siamese and Chinese residents are forming a syndicate with a view of starting a national bank at Bangkok, and that the Book Club which has been doing a very good business as a Siamese banking concern, is to be amalgamated with the new bank. The capital of the company is to be Tcs. 4,500,000 in 3,000 shares of Tcs. 1,500 each, and nearly all the shares are taken up.

**INTERNATIONAL COTTON MANUFACTURING COMPANY, LTD., SHANGHAI.**—In their report to the shareholders at the 10th annual meeting the directors of this company show that including the balance brought forward from the previous year of Tls. 13,029.29 there is a sum of Tls. 152,727.27 at the credit of profit and loss account. This balance will be disposed of as follows:—Writing off plant and machinery, Tls. 50,000; mill building, Tls. 17,805.29; Chinese houses, Tls. 3,416.20; mill stores, Tls. 5,757.21; ginning mill, Tls. 5,000; place to reserve, Tls. 50,000, and carry to new account, Tls. 15,715.86.

**HOTEL DES COLONIES, LTD., SHANGHAI.**—At an extraordinary general meeting of this company, recently held, the shareholders voted power to the directors to enter into negotiations with the owners of the property with a view to purchasing the same. Should the deal go through it is understood that Hotel des Colonies, Ltd., will convert the property into an up-to-date, modern hotel. Tls. 225,000 is asked by the owners, which the company does not accept. Hotel des Colonies has paid an average dividend of 6½ per cent to shareholders for the last 3 yrs., and is under excellent management. The company's lease of the property has yet 2 yrs. to run.

**CHINESE ENGINEERING AND MINING COMPANY, LTD.**—The board of directors of this company having declared a final dividend of 1s. per share, free of income tax, for the year ended February 28th, 1905, holders of bearer shares and holders of dividend warrants received from London on account of registered shares, will be paid their dividends on presenting the No. 5 coupons of the bearer shares and the dividend warrants on registered shares to either of the following banks at Shanghai or Tientsin:—Chartered Bank of India, Australia and China and Russo-Chinese Bank. The payment will be made in either dollars or taels as the holder may wish, at the buying rate of exchange of the day.

**TIENTSIN-SHANHAIKUAN RAILWAY.**—This railway is reported to be reaping large profits. After paying off the interest on the British bonds and redeeming those, the numbers of which came out of the annual drawing, and after defraying the running expenses, and appropriating a large sum as a loan for the construction of the Peking-Kalgan Railway, in 1904, there was left a net profit of over Tls. 1,200,000. Out of this sum, Tls. 800,000 will be presented to the Throne to replenish the privy purse; Tls. 200,000 will be set apart for the Peiyang Administration; the administrator of Northern Railways will receive Tls. 100,000, and the remaining lakh or so will be divided among the employees in proportion to their monthly salaries.

**EASTERN EXTENSION, AUSTRALIA AND CHINA TELEGRAPH COMPANY.**—According to *The London and China Express*, the directors of this company in their report for the half-year ended June 30th last show that the gross receipts during that period amounted to £18,849, against £300,057 for the corresponding half-year of 1904. The working expenses, including £21,45, for maintenance of cables, absorbed £18,920, against £14,707 for the corresponding period of 1904, leaving a balance of £212,892. From this is deducted £3,283 for income tax, and £14,615 for interest, etc., on debenture stock, leaving £194,900 as the net profit for the half-year. After adding £22,181, brought forward from the previous half-year, there is an available balance of £17,081. Two quarterly interim dividends of 1½ per cent each, amounting to £75,000, have been paid for the half-year, leaving £142,881, of which £100,000 has been transferred to the general reserve fund, and the balance of £42,881 is carried forward. The tariff for telegrams transmitted between Japan and Europe by the company's route was reduced on July 1st last from 5s. 8d. to 4s. 10d. per word, making the rate the same as by the Great Northern Company's route via Russia.

# FAR EASTERN SHARE QUOTATIONS

COURTESY OF BENJAMIN, KELLY & POTTS, SHAREBROKERS, HONGKONG, December, 1905.

STOCKS	WHEN ESTAB- ISHED	CAPITAL	NO. OF SHARES	VALUE	PAID UP	RESERVE	AT WORKING ACCOUNT	DATE	LAST DIVIDEND	W.H.S. 1905	CLOSING QUOTATIONS	Percen- tage Appre- ciation or De- preci- ation over last year
<b>Bank.</b>												
Hongkong and Shanghai Banking Corporation	1865	\$10,000,000	80,000	\$125	\$125	{ g \$1,000,000 s \$8,500,000 i \$250,000 }	... \$1,702,728	30-6-05	{ £1.15/- at exchange 1/10 1/2 = \$18.66.67 for first half-year 1905 .....	1-2-04	5	{ \$875 buyers London £93 1/2 }
National Bank of China, Limited	1891	£699,475	99,925	£7	£5	\$200,000	... \$41,768	31-12-04	\$2 (London 3/6) for 1903 .....	1-2-04	5	£38 buyers
<b>Marine Insurances.</b>												
Canton Insurance Office, Limited	1881	\$2,500,000	10,000	\$250	\$50	{ \$1,600,000 s \$1,575,55 i \$950,000 }	... \$211,540	31-12-04	£20 for 1904 .....	21-10-05	5	£330 sellers
China Trader's Insurance Co., Ltd.	1865	\$2,000,000	24,000	\$83.33	\$25	{ \$151,992 s \$362,366 i \$371,445 }	... Nil.	30-4-04	£4 1/2 for year ended 30-4-1904 .....	8-12-04	5	£89 buyers
North China Insurance Co., Ltd.	1863	£150,000	10,000	£15	£5	{ g £100,000 s Tls. 100,000 i Tls. 50,000 }	... Tls. 302,053	30-6-05	Final of 7/6 for making 15/- for 1904	25-10-05	5	Tls. 92 1/2
Union Insurance Society of Canton, Limited	1867	\$2,500,000	10,000	\$250	\$100	{ g £40,000 s \$331,453 i £1,043,930 u \$1,152,346 }	... \$2,339,112	30-6-05	£40 for 1904 .....	20-1-04	5	\$750 sellers
Yangtsze Insurance Association, Ltd.	1862	\$800,000	8,000	\$100	\$60	{ i \$750,000 s \$50,000 u \$5,890 }	... \$599,364	31-12-05	\$12 and \$3 special dividend for 1903	12-4-05	8 1/2	\$170
<b>Fire Insurances.</b>												
China Fire Insurance Co., Ltd.	1870	\$2,000,000	20,000	\$100	\$20	{ \$1,000,000 s £218,039 i £2,241 }	... \$260,374	31-12-04	\$6 dividend and \$1 bonus for 1903 .....	10-3-05	8 1/4	\$86 buyers
Hongkong Fire Insurance Co., Ltd.	1868	\$2,000,000	8,000	\$250	\$50	... \$1,200,505	... \$360,372	31-12-04	£34 for 1903 .....	7-3-05	10 1/2	\$335 buyers
<b>Shipping.</b>												
China and Manila Steamship Co., Ltd.	1882	£750,000	(1) 30,000	£25	£25	... £1,000	... £8,832	31-12-04	£1 for 1904 .....	27-3-05	5 1/2	£20 sellers
Douglas Steamship Co., Ltd.	1883	£1,000,000	20,000	£50	£50	{ i £88,941 e £250,000 }	... Nil.	30-6-05	£3 1/2 for year ended 30-6-1905 .....	25-9-05	10	£35 buyers
Hongkong, Canton and Macao Steam-boat Company, Ltd.	1865	£1,200,000	80,000	£15	£15	{ d £600,000 i £145,376 f £120,000 }	... £8,064	30-6-05	£1 for first half-year 1905 .....	16-8-05	5	£25
Indo-China Steam Navigation Company, Ltd.	1882	£1,200,000	(2) 60,000	£10	£10	{ i £241,150 h £3,999 }	... £4,435	31-12-04	12/- @ 1/10 7-8 = £6.29.51 for 1904 ..	13-7-05	6 1/2	£95
Shanghai Tug and Lighter Co., Ltd.	1903	Tls. 1,500,000	200,000	Tls. 50	Tls. 50	{ i Tls. 25,000 s £400,000 }	... Tls. 43,762	31-12-04	{ Interim of Tls. 2. for 1905 .....	28-8-05	1 1/2	Tls. 55 sales
Do. Preference.			100,000						{ Interim of Tls. 1 3/4 for 1905 .....			Tls. 48 sales
"Shell" Transport & Trading Co., Ltd.	1898	£2,000,000	2,000,000	£1	£1	{ i £4,116 s £65,000 }	... £58,852	31-12-03	Interim of 1/- (Coupon No. 5) for '04	1-1-05	4	25/-
"Star" Ferry Co., Ltd.	1898	£200,000	10,000	£10	£10	{ i £24,257 s £400,000 }	... £929	30-4-05	{ £1.80 \$0.90 cents }	29-5-05	1 1/2	£32 buyers
1900		£200,000	10,000	£10	£5				for year ended 30-4-05			£23
Straits Steamship Co., Ltd.	1890	£500,000	(3) 5,000	£100	£100	{ e £21,075 i £130,153 s Tls. 98,000 }	... £21,231	31-12-04	£10 for 1904 .....	21-3-05	7	£149 buyers
Taku Tug & Lighter Co., Ltd.		T.T. 1,500,000	30,000	T.Tls. 50	T.Tls. 50	{ d Tls. 195,479 e Tls. 28,000 i Tls. 81,200 }	... Tls. 4,333	31-12-04	Interim of Tls. 2 for 1905 .....	27-7-05	12 1/4	Tls. 33 sales
<b>Refineries</b>												
China Sugar Refining Company, Ltd.	1878	\$2,000,000	20,000	\$100	\$100	{ e \$450,000 r \$150,000 }	... \$42,812	31-12-04	Interim of \$10 for 1905 .....	18-8-05	9 1/2	\$215 sellers
Luzon Sugar Refining Company, Ltd.	1882	\$700,000	7,000	\$100	\$100	none	Dr. \$85,987	31-12-04	\$3 for 1897 .....	24-3-98	—	\$25
Perak Sugar Cultivation Co., Ltd.	—	Tls. 350,000	7,000	Tls. 50	Tls. 50	Tls. 100,000	... Tls. 3,723	31-7-05	Tls. 2 1/2 for year ending 30-9-1904 ..	17-12-04	—	Tls. 68 sellers
<b>Mining.</b>												
Chinese Engineering & Mining Co., Ltd.	1901	£1,000,000	1,000,000	£1	£1	{ d £80,000 h £12,289 }	... £13,355	28-2-05	Final of 1/- (No. 5) .....	2-11-05	—	Tls 8.60 buyers
Oriental Consolidated Mining Co., Ltd.	1901	G. \$5,000,000	y 500,000	G. \$10	G. \$10	none	G. \$672,093	31-12-04	Interim of 50cts. (gold) for '05 (No. 5)	11-7-05	—	G. \$18 buyers
Raub Australian Gold Mining Co., Ltd.	1892	£200,000	150,000	£1	18/10	{ £4,873 }	Dr. £8,745	31-3-05	No. 12 of 1/- = 48 cents .....	28-1-01	—	£3 1/2 buyers

STOCKS	WHEN ESTAB- ISHED	CAPITAL	NO. OF SHARES	VALUE	PAID UP	RESERVE	AT WORKING ACCOUNT	DATE	LAST DIVIDEND	WHEN PAID	APPROXIMATE RETURN AT PRESENT QUOTATION	CLOSING QUOTATIONS PER CENT
Docks, Wharves and Godowns.												
Farnham (S. C.), Boyd & Co., Ltd.	1901	T5,520,000	55,200	T100	T100	T1,000,000	T34,924	30-4-05	Final of T8 making T13 for 1904/05	24-6-05	9½%	T137 buyers
Fenwick (Geo.), & Company, Ltd.	1889	£450,000	6,000	\$25	\$25	\$70,000	\$8,577	31-12-04	{ \$3½ for 1904, on 6,000 shares... First year.....	13-3-05	—	\$26 \$24½ buyers
Hongkong and Kowloon Wharf and Godown Co., Ltd.	1886	\$2,000,000	40,000	\$50	\$50	\$250,000	d.r. \$58,423	31-12-04	Interim of \$2½ for 1905.....	26-7-05	4½%	\$106 buyers
Hongkong & Whampoa Dock Co., Ltd.	1901	\$2,500,000	50,000	\$50	\$50	\$10,000	\$41,500	30-6-05	\$6 for first half year '05.....	22-8-05	7½%	\$165
New Amoy Dock Co., Ltd.	1892	\$67,500	10,000	\$6¾	\$6¾	\$55,500	Dr. \$10,260	31-12-04	\$1½ for 1903.....	5-5-04	7½%	\$17
Shanghai and Hongkew Wharf Co. Ltd.	1902	T3,200,000	32,000	T100	T100	T487,210	T10,711	31-12-04	Interim of T6 for 1905.....	23-8-05	6%	T197½ buyers
Yangtsze Wharf and Godown Co., Ltd.	1902	T250,000	2,500	T100	T100	T59,880	T17,500	31-12-04	T18 for 1904.....	29-3-05	9½%	T190 buyers
Lands, Hotels and Buildings.												
Astor House Hotel Co., Ltd.	1901	\$750,000	30,000	\$25	\$25	\$14,156	\$9,028	30-6-05	\$2½ for year ending 30-6-1905.....	19-8-05	9%	\$27½ buyers
Astor House Hotel, Ltd. (Tientsin)	—	T100,000	2,000	T. T50	T. T50	T34,000	T806	29-2-05	Interim of T5.....	21-10-05	8%	T125 buyers
Central Stores, Ltd.	—	\$91,845	6,000	\$15	\$12	\$12	\$20,000	31-12-04	Final of 60 cents making \$1.80 for '04.....	30-3-05	12%	\$15
Do. (Founders')	—	\$91,845	123	\$15	\$12	\$12	\$1,502	—	None.....	—	—	\$100
Do. (New Issue)	1904	\$360,000	24,000	\$15	\$7½	\$618,975	\$10,126	30-6-05	55 for first half-year 1905.....	4-9-05	6½%	\$150
Hongkong Hotel Co., Ltd.	1866	\$600,000	12,000	\$50	\$50	\$31,037	\$37,875	31-12-04	Interim \$3½ for 1905.....	27-7-05	5½%	\$125 buyers
Hongkong Land Investment and Agency Co., Ltd.	1889	\$5,000,000	50,000	\$100	\$100	\$250,000	T40,066	31-12-04	Interim of T3 for 1905.....	21-7-05	6¾%	T122 sellers
Hotel des Colonies Co., Ltd. (Shanghai)	1902	T225,000	9,000	T25	T25	T20,986	T7,202	31-3-05	Interim of T1.....	1-11-05	15%	T16 sales
Hotel Metropole Company, Limited	1904	\$200,000	2,000	\$100	\$100	none	\$4,699	30-6-05	Final of \$6 making \$10 for the year.	26-7-05	9¾%	\$102½
Humphreys' Estate & Finance Co., Ltd.	1887	\$1,500,000	150,000	\$10	\$10	\$50,000	\$11,958	31-12-04	90 cents for 1904.....	11-2-05	7%	\$12½
Kowloon Land and Building Co., Ltd.	1889	\$300,000	6,000	\$50	\$30	none	\$377	31-12-04	\$3 for 1904.....	31-1-05	7½%	\$40 buyers
Shanghai Land Investment Co., Ltd.	1901	T2,600,000	52,000	T50	T50	T828,813	T40,066	31-12-04	Interim of T3 for 1905.....	21-7-05	6¾%	T122 sellers
Tientsin Hotel des Colonies, Ltd.	1903	T70,000	1,400	T50	T50	T170,000	T670	31-12-04	Interim of T3 for 1905.....	4-7-05	12%	T45 sellers
Tientsin Land Investment Co., Ltd.	1902	T772,600	7,726	T100	T100	T67,300	T725	31-12-04	Interim of T3 for 1905.....	2-8-05	6%	T115 sellers
West Point Building Co., Ltd.	1889	\$625,000	12,500	\$50	\$50	none	\$1,247	31-12-04	Interim of \$1½ for 1905.....	27-7-05	6¾%	\$55 sellers
Cotton Mills.												
Ewo Cotton Spinning and Weaving Co., Ltd.	1895	T750,000	15,000	T50	T50	none	T12,844	31-10-04	T4 for year ended 31-10-1903.....	22-12-03	6½%	T65 buyers
Hongkong Cotton Spinning, Weaving and Dyeing Co., Ltd.	1901	\$1,250,000	125,000	\$10	\$10	\$30,000	\$23,264	31-7-05	\$1 for year ended 31-7-1905.....	4-9-05	7%	\$14
International Cotton Manufacturing Co., Ltd.	1895	T750,000	10,000	T75	T75	T100,000	T18,718	30-9-04	Interim of 3% a/c 1898.....	30-4-98	—	T44 sales
Laou-kung-mow Cotton Spinning & Weaving Co., Ltd.	1895	T800,000	8,000	T100	T100	none	T10,000	31-12-04	Interim of 4% a/c 1898 on 6,000 shares	1-8-98	—	T60 buyers
Soey Chee Cotton Spinning Co., Ltd.	1895	T1,000,000	2,000	T500	T500	T5,658	T22,051	31-12-04	4% for 1897.....	2-2-98	—	T250 buyers
Miscellaneous.												
Anglo German Brewing Co., Ltd.	1904	\$100,000	4,000	\$100	\$100	none	\$20	31-12-04	None.....	—	—	\$100
Bell's Asbestos Eastern Agency, Ltd.	1895	£5,377.105	8,604	12/6	12/6	£314	£770	31-12-04	1s. 3d per share for 1904.....	21-7-05	9½%	\$7 buyers
Campbell, Moore & Co., Ltd.	1886	\$12,000	1,200	\$10	\$10	\$8,000	\$1,182	31-12-04	\$3 for 1904.....	1-4-05	8½%	\$36
China-Borneo Co., Ltd.	1903	\$720,000	60,000	\$12	\$12	none	—	31-12-04	\$1 for 1904.....	17-3-05	10%	\$10 sellers
China Flour Mill Co., Ltd.	—	T200,000	4,000	T50	T50	T30,000	T718	31-12-04	Interim of T5 for 1905.....	24-7-05	—	T85 sellers
China Light and Power Co., Ltd.	1901	\$500,000	50,000	\$10	\$10	none	\$3,739	29-2-04	None.....	—	—	\$10
China Provident Loan and Mortgage Co., Ltd.	1898	a \$1,000,000	100,000	\$10	\$10	\$80,000	\$1,581	31-12-04	80 cents for 1904.....	18-1-05	8¾%	\$9½ buyers
Dairy Farm Company, Ltd.	1896	\$187,500	25,000	\$7½	\$6	\$25,000	\$2,864	31-7-05	\$1.20 for year ending 31-7-1905.....	24-11-05	7½%	\$16

STOCKS	WHEN ESTAB- LISHED	CAPITAL	NO. OF SHARES	VALUE	PAID UP	RESERVE	AT WORKING ACCOUNT	DATE	LAST DIVIDEND	WHEN PAID	CLOSING QUOTATIONS	
											PER CENT	PER CENT
<b>Miscellaneous.—Continued</b>												
Green Island Cement Co., Ltd.	1889	\$1,500,000	150,000	\$10	\$10	\$400,000	\$95,054	31-12-04	\$2 for 1904	27-2-05	7%	\$28 1/2
Hall & Holtz, Ltd.	—	\$420,000 (8)	21,000	\$20	\$20	\$500,000	\$7,551	29-2-05	Final of \$1 1/2 making \$2 1/2	15-4-05	10 1/2%	\$25
Hongkong Electric Co., Ltd.	1889	\$600,000	30,000	\$10	\$10	none	\$2,151	20-4-05	\$1.00 for year ending 30-4-05	17-7-05	6 3/4%	\$15 buyers
Hongkong High-Level Tramways Co., Ltd.	1887	\$125,000	1,250	\$100	\$100	\$50,000	\$2,796	30-11-04	\$15 for year ending 30-11-04	24-12-04	7%	\$225
Hongkong Ice Company, Ltd.	1881	\$125,000	5,000	\$25	\$25	\$60,000	\$5,356	31-12-04	Interim of \$4 for 1905	2-8-05	7%	\$235
Hongkong Rope Manufacturing Co., Ltd.	1883	\$500,000	10,000	\$50	\$50	\$60,000	\$11,137	31-12-04	\$10 for 1904	10-4-05	7%	\$152 buyers
Hongkong Steam Waterboat Co., Ltd.	1900	\$150,000	15,000	\$10	\$10	\$2,500	\$82	30-9-04	Final of 50 cents making \$1 for year ended 30-9-1905	24-11-05	7 3/4%	\$13
Lane, Crawford & Co., Ltd. (Shanghai)	1903	\$250,000	2,500	\$100	\$100	none	\$42,009	29-2-05	Interim of \$5	20-11-05	9 1/2%	\$146 buyers
Maatschappij tot Mijn-, Bosch-en Landbouwexploitatie in Indië, Ltd.	1892	G. £ 500,000	25,000	G. 100	G. 100	T528,210	T15,849	31-10-04	3rd quarterly dividend of T2 1/2 making so far T15 for '05	15-9-05	—	T210 buyers
Mondon, (E. L.) Ltd.	1902	T350,000	7,000	T50	T50	none	Dr. T117,638	31-12-04	T5 for 1902	2-5-03	—	T25 sellers
Philippine Company, Ltd.	1904	\$675,000	67,500	\$10	\$10	none	Dr. P53,619	31-12-04	None	—	—	\$5 buyers
Shanghai and Hongkong Dyeing and Cleaning Co., Ltd.	1903	\$60,000	1,200	\$50	\$50	none	Dr. \$5,537	31-8-04	None	—	—	\$50
Shanghai Gas Co., Ltd.	1903	T800,000	16,000	T50	T50	T145,000	T108,172	31-12-04	Interim of T3 1/2 for 1905	26-7-05	7%	T126 buyers
Shanghai Horse Bazaar Co., Ltd.	1904	T270,000	5,400	T50	T50	T45,000	T9,751	31-12-04	T6 for 1904	17-3-05	8 1/4%	T72 1/2 sellers
Shanghai Pulp and Paper Co., Ltd.	—	T450,000	4,500	T100	T100	T25,000	T6,968	31-12-04	Interim of T6 for 1905	22-7-05	9%	T151 1/2 sales
Shanghai Sumatra Tobacco Co., Ltd.	1902	T600,000 (9)	30,000	T20	T20	T24,820	T25,000	31-10-04	Interim of T2	20-10-05	13 3/4%	T65
Shanghai Waterworks Co., Ltd.	1881	£144,000	7,200	£20	£20	T170,000	T17,220	31-12-04	Interim of 15/- for 1905	27-7-05	4 1/2%	T450 buyers
South China Morning Post, Ltd.	1903	\$150,000	6,000	\$25	\$25	none	Dr. \$5,068	29-2-05	None	—	—	\$20
Steam Laundry Co., Ltd.	1902	\$75,000	15,000	\$5	\$5	none	\$1,134	31-5-05	50 cents for year ended 31-5-05	20-11-05	7%	\$7 1/4
Straits Ice Company, Ltd.	1884	\$200,000	2,000	\$100	\$100	\$25,000	\$700	31-12-04	\$5 account 1905	...-2-05	—	\$160 buyers
Tientsin Waterworks Co., Ltd.	1901	T. T200,000	2,000	T. T100	T. T100	T15,259	T4,000	30-4-05	Final of T4 1/2 making T8 1/2 for '04/5	17-6-05	7%	T. T125
United Asbestos Oriental Agency, Ltd. (do. (Founders))	1896	\$100,000	9,900	\$10	\$4	\$22,000	\$551	31-5-05	80 cents for year ended 31-5-05	29-7-05	9%	\$7
Watson (A. S.) & Co., Ltd.	1879	\$7,000	6,000	\$10	\$10	\$2,000	\$20,000	31-12-04	Final of 50 cents making \$1 for '04	20-8-05	8 1/2%	\$10 ex d. buyers
William Powell, Ltd.	1901	\$150,000	15,000	\$10	\$10	\$4,500	\$676	30-6-05	Interim of 50 cents for 1905	25-11-05	11%	\$11 buyers

LOANS AND DEBENTURES	AGENTS FOR THE LOAN	AMOUNT OF LOAN	PAR VALUE	OUT- STAND'G BONDS	WHEN PAYABLE	CLOSING QUOTATIONS
China Government, 7 per cent. Silver Loan 1880 F.	Hongkong & Shanghai Bkg. Cor.	T707,200	T250	100	Mar. 31st & Sept. 30th each year until Mar. 31st, 1917.	100
Hongkong Hotel Co., Ltd., 6 1/2% Mortgage Debentures of 1899	Hongkong & Shanghai Bkg. Cor.	\$500,000	\$250	100 all	Half yearly, June 30th and December 31st	100
Shanghai & Hongkew Wharf Company, Ltd. 6 1/2% Debentures of 1902	Hongkong & Shanghai Bkg. Cor.	T543,000	T100	100	Half yearly, June 30th and December 31st	100
Astor House Hotel Co., Ltd. 8 1/2% Debentures of 1903	Hongkong & Shanghai Bkg. Cor.	T500,000	T100	100	Half yearly, January 1st and July 1st	100
Chinese Engineering & Mining Co., Ltd. 6 1/2% Debentures of 1903	—	£500,000	£434,000	100	Half yearly, June 30th and December 31st	par
International Cotton Manufacturing Co., Ltd. 6 1/2% Debentures of 1901	Russia Chin. B	T500,000	T100	100	Half yearly, March 31st and September 30th	par

a Authorized capital \$2,000,000

b Building Reserve Account.

c Capital Reserve Fund.

d Depreciation Fund.

e Equalization of Dividend Fund.

f Exchange and Investment Fluctuation Account.

g Gold Reserve Fund

h Exchange Reserve Account.

i Insurance Fund.

j Reinsurance Fund.

k Contingencies Account

l Legal Reserve Fund.

m Sinking Fund.

n Premium on New Issue.

o Repairs and Renewals Account.

p Silver Reserve Fund.

q Underwriting Suspense Account.

r

s

t

u

v

w Special Works Fund.

x Extra Reserve Fund.

y 75,000 owned by the Company.

z 6,000 shares unissued.

1 5,725 shares unissued.

2 First issue of 60,000 of which 10,411 unallotted.

3 785 shares unissued.

4 7,600 shares unissued.

5 1,616 shares unallotted.

6 842 shares unallotted.

7 14,000 shares unissued

8 399 shares unissued.

9 Only 13,000 shares issued.

\* Based on last year's dividend.

† Only Tls. 134,000 taken up.

‡ 268 held by the Company.

§ In certificates of £20 and £100

|| Redeemable in 10 years, or at option of Company the Company giving 6 months' notice.

† Redeemable at par at rate of £10,000 per annum from 31st December, 1903, to 31st December, 1952

Dr. Deficit.

# SINGAPORE SHARE QUOTATIONS.

COURTESY MESSRS. FRASER & CO., BROKERS, SINGAPORE, DECEMBER, 1905.

NAME	DATE OF FORMATION	CAPITAL	CAPITAL PAID UP	NO. OF SHARES	ISSUE VALUE	RESERVE	LAST DIVIDEND	SINCE LAST MAIL HIGHEST	SINCE LAST MAIL LOWEST	CLOSING QUOTATIONS
<b>Mining.</b>										
Bersawali Gold Mining Co., Ltd.	1900	\$175,000	115,000	13,500 1	10					\$ 14.00
" " " " " Deferred.				4,000	10					8.00 sellers
Bruseh Hydraulic Tin Mining Co., Ltd.	1901	\$600,000	600,000	60,000	10					10.25 sellers
Kadana Gold Mining Co., Ltd.	1901	\$300,000	300,000	20,000	10					2.00 sellers
" " " " " Pref.				10,000	10					10.00 nominal
Kechau Goldfields, Ltd. Fully paid	1902	£30,000	16,175.7/-	6,207	1					3.00 sellers
" " " " Contrib.				23,793 2	1					2.00 sellers
Pahang Corporation Ltd.	1889	£250,000	244,306	244,306	1					2.00 sellers
Pahang Kabang Ltd.	1890	£375,000	375,000	360,000	1					0.75 sellers
" " " " Pref.				15,000	1					..... nom.
Queensland Raub G. M. Co., Ltd. Fully paid	1901	£146,700	100,866	36,700	1					..... nom.
" " " " Contrib.				110,000	1					0.30 sellers
Raub Aust. Gold Min. Co., Ltd. Fully paid	1892	£200,000	191,250	50,000	1					3.75 nom.
" " " " Contrib.				150,000	1					3.50 sales
Redjang Lebong Mining Co.	1898	£1,200,000	1,800,000	20,000 3	100		18. " " "			410.00 buyers
Royal Johore Tin Mining Co., Ltd.	1900	\$220,000	220,000	22,000	10		22 9-10% for year ending 31-12-04			3.25 sellers
Sipiau Tin Co., Ltd.	1899	\$230,000	230,000	23,000	10		5 " " for year ending 15-2-04			5.00 sellers
The Belat Tin Mining Co., Ltd.	1903	\$300,000	300,000	30,000	10		5 " " for 1/2 year ending 30-6-05			5.00 sellers
Tronoh Mines, Ltd.	1902	£160,000	149,185	160,000 5	1					20.00 buyers
Duff Development Co., Ltd.	1903	£400,000	350,000	400,000 6	1					8.00 sales
<b>Rubber.</b>										
Bukit Rajah Rubber Co.	1903	£70,000	61,000	70,000 13	1					11.00
Balgownie Rubber Estate Ltd.	1905	\$200,000	100,000	20,000	10					\$8.00 buyers
Cicely Rubber Estates Co.	1904	£12,000	10,500	6,000	1					£2.7s. 6d
" " " " 5% Pref.				6,000	1					£1.15s. od.
Pataling Rubber Estate Syndicate	1903	£30,000	17,500	30,000 15	1					£5. os. od. ....
Ribu Planting Co., Ltd.	1904	£200,000	135,000	2,000 16	100					\$240.00
Sandycroft Rubber Co.	1904	\$100,000	85,000	1,000 17	100					175.00 buyers
Selangor Rubber Co., Ltd.	1898	£30,000	26,000	30,000 18	1					£7.15s. od.
Sime Rubber Company, Ltd.	1904	\$100,000	88,000	1,000 20	10					\$12.00 buyers
Singapore & Johore Rubber Co., Ltd.	1903	\$100,000	78,750	150	100					\$125.00 buyers
" " " " Contrib.				850	100					100.00 buyers
Sungei Way Rubber Co. Fully paid	1904	£50,000	13,920	6,920	1					£2.3s. od.
" " " " Contrib.				35,000 19	1					£1.8s. 9d.
Vallambrosa Rubber Co.	1904	£60,000	50,000	60,000	1					£5. os. od.
<b>General.</b>										
Fraser & Neave, Ltd.	1898	\$225,000	225,000	4,500	50		10 p. ct. and 2 1/2 per cent bonus for '04			
Hogan & Co., Ltd.	1904	\$480,200	334,800	3,348	100		7 per cent March 1905			105.00 sellers
H'kong and Shanghai Banking Corporation	1865	\$10,000,000	10,000,000	80,000	125		35s. for 1/2 year ending 30-6-05			42.00 sellers
Howarth Erskine, Ltd.	1901	\$1,200,000	1,200,000	12,000	100		10% and 5% bon. for yr. end. 30-6-05			280.00 sellers
Maynard & Co., Ltd.	1901	\$34,000	34,000	3,400	10		20 per cent for year ending 31-10-04			23.00 sellers
Riley, Hargreaves & Co., Ltd.	1899	\$875,000	875,000	6,000	100		10 p. ct. and 2 1/2 p. ct. bon. for year '04			200.00 sales
" " " " 7% Pref.				2,750	100		7 p. ct. for year 1904			115.00 buyers
Singapore Cold Storage Co., Ltd.	1903	\$600,000	240,000	24,000 4	10		12 1/2 per cent for year ending 31-7-04			8.75 buyers
Singapore Dispensary Ltd.	1891	\$30,000	30,000	600	50	19,000	" " interim for 1905			75.00 sellers
Straits Ice Co., Ltd.	1884	\$200,000	200,000	2,000	100	100	22,000			150.00 buyers
Straits Steam Ship Co., Ltd.	1890	\$500,000	421,500	5,000 7	100	100	400,000	5 p. ct. interim for 1905		152.50 buyers
Straits Trading Co., Ltd.	1887	\$3,000,000	2,500,000	300,000 8	10	10	700,000	10 p. ct. & 50cts. bon. 1/2 yr. end. 31-3-05		42.75 sellers
Tanjong Pagar Dock Co., Ltd.	1864	\$3,700,000	3,700,000	37,000	100	100	1,021,395 12	\$20 for half year ending 31-12-04		475.00 sellers
<b>Debentures.</b>										
Howarth Erskine Ltd. 7 per cent	250,000									3 per cent prem.
Singapore Municipal 6 "	400,000									nominal
" " " 4 "	1,878,000									3 " prem. buyers
" " " 4 "	602,300									2 " dis. nominal
Riley, Hargreaves & Co., Ltd. 6 p. cent	225,000									3 " prem. buyers
Tanjong Pagar Dock Co., Ltd. 6 "	250,000									2 " prem. nom. prem. sales
" " " 5 "	1,365,500									

13,500 unissued.

2 13,300 "

3 2,000 "

4 36,000 "

5 10,815 unissued.

6 50,000 "

7 785 "

8 50,000 "

9 Special Gold Reserve Fund.

10 Insurance Fund.

11 Sundry Reserves.

12 Sundry Reserves.

13 9,000 unissued.

14 1,500 "

15 12,500 "

16 650 "

17 150 unissued.

18 4,000

19 Mortgage £5,000

## YOKOHAMA SHARE QUOTATIONS

COURTESY A. C. HUTTON POTTS, SHARE AND GENERAL BROKER, YOKOHAMA, NOVEMBER, 1905.

STOCKS.	CAPITAL.	NO. OF SHARES.	ISSUE VALUE.	AMOUNT PAID UP.	RESERVE FUND.	AT WORKING ACCOUNT OR CARRIED FORWARD.	DATE.	LAST DIVIDEND.	FOR TERM.	CLOSING QUOTATION.
Brett & Co., Limited.....	28,000	2800	10	10			30/6/03	6%	for 1 year	7 Nominal.
Club Hotel, Limited .....	185,000	1850	100	100			31/3/04	7%	.. 1 year	45 Nominal.
Grand Hotel, Limited ...	250,000	2500	100	100		Y.2,608.34	30/6/05	6%	.. 1/2 year	220 Buyers.
Helm Bros., Limited .....	186,000	3720	50	50		Y.8,349.06	31/12/04	17 1/2%	.. 1 year	75 Sales.
Langfeldt & Co., Limited .....	150,000	1500	100	100		Dr.30,174.81	30/6/05		.. 1/2 year	35 Buyers.
C. Nickel & Co., Limited .....	125,000	5000	25	25		10,572.91	31/10/04	16%	.. 1 year	32 1/2 Sellers.
Japan Brewery Company, Limited .....	450,000	9000	50	50	170,000	4,781.87	31/12/04		.. 1 year	105 Buyers.
Yokohama Engine and Iron Works .....	130,000	2600	50	50	20,000	Y.5,935.35	31/5/05	20%	.. 1 year	85 Buyers.
Hirano Mineral Water Co., Ltd.....	125,000	5000	25	25					1st year	25 Sellers.
Oriental Hotel, Ltd., Old Ordinary .....			1490	50			31/8/05	12%	.. 1 year	75 Nominal.
" " New "			1510	50						63 Sales.
" " Old Preference .....	251,000	750	50	50	60,542.50					
" " New "			1250	50						
" " Founders .....			80	12 1/2						500 Sales.

DEBENTURE LOANS.	AMOUNT OF LOAN.	FACE VALUE OF DEBENTURES.	RATE OF INTEREST.	INTEREST PAYABLE.	CLOSING QUOTATION.
Japan Brewery Company, Limited .....	200,000.00	100.00	7%	1 April and 1 October.	108 Sales.
Brett and Company, Limited .....	15,500.00	100.00	7%	1 June and 1 Dec.	95 Sellers.
Yokohama United Club .....	250,000.00	100.00	7%	30 June and 31 Dec.	108 Sales.
C. Nickel and Company, Limited .....	50,000.00	100.00	8%	1 May and 1 Nov.	110 Sellers.

## MANILA SHARE QUOTATIONS

COURTESY MESSRS. W. A. FITTON &amp; CO., MANILA, P. I., DECEMBER, 1905.

STOCK.	When Establis'd.	CAPITAL.	NO. OF SHARES.	VALUE.	PAID UP.	RESERVE.	LAST DIVIDEND AND WHEN PAID.	QUOTATION.
<b>Banks.</b>								
Banco Español-Filipino.....	1852	P1,500,000	7,500	200.00	all	† P900,000	8 per cent for year ended 31st Decr. 1904.....	Sellers @ P310
Yuen Sheng Exchange & Trading Co.....	1904	2,000,000	10,000	200.00	100	First year	First year.....	Buyers @ P125
<b>Cigar Companies</b>								
Alhambra .....	1898	60,000	300	200.00	all	* None	None since 1898 .....	Buyers @ P165
Dos Hermanas.....	1905	+* 50,000	200	200.00	all	First year	First year .....	Nominal @ P200
Germinal.....	1899	511,817.97	720	500.00	all	P98,878.27	4 per cent year ended 31st Dec 1904.....	Buyers @ P550
Maria Cristina .....	1901	135,000	300	450.00	all	None	5 per cent for 1904; written off P35,000 .....	Sellers @ P450
<b>Dock.</b>								
Varadero (Cañacao) Slip.....	1884	450,000	4,500	100.00	all	†† P271,745.05	2 1/2 per cent for 1/2 year ended Sept. 30/05 .....	Nominal @ P100
<b>Shipping.</b>								
Compañía Marítima.....	1897	** 1,200,000	6,000	200.00	all	** None	None. Insurance Reserve Fund of P46,573.89 .....	Sellers @ P150
<b>Gold Mining &amp; Dredging.</b>								
Eastern Mining Co.....	1904	†† \$3,000,000	3,000,000	\$1	"A"	None	None .....	Nominal
Oriental Mining Co.....	do	†† \$1,500,000	1,500,000	\$1	"B"	do	do .....	do
Philippine Mining Co.....	do	†† \$3,000,000	3,000,000	\$1	"C"	do	do .....	Sellers @ 20 cents.
Philippines Mining, Power & Development Co.....	do	†† \$1,500,000	1,500,000	\$1	"D"	do	do .....	Nominal.
<b>Insurance.</b>								
Yektouling Fire & Marine....	1903	\$2,000,000	10,000	200.00	100	P30,000	10 % for year ended 31-12-04 .....	Buyers @ P120
<b>Sundry.</b>								
Bataan Coal Mining Co.....	1902	1,000,000	5,000	200.00	all	None	None .....	Nominal @ P200
"La Concha" Button Factory...	1905	75,000	750	100.00	all	None	First year .....	Sales @ P.00
Fábrica de Hielo (Ice Co.)....	1886	350,000	7,000	50.00	all	P59,224.08	Interim dividend of 8 % on 6 mos. working ended June 30-05 .....	Sellers @ P85
Iron Works (San Nicolás).....	1900	300,000	600	500.00	all	None	Dividend for 1903, but unpaid, P94,520.57 at credit of P. & L. Dec. 31/01 .....	Sellers @ P500; no buyers
Montserrat Bakery Co.....	1905	20,000	40	500.00	all	First year	First year .....	Sellers @ P525
Philippines Co.....	1904	675,000	67,500	10.00	all	None	None .....	Buyers @ P3.50

† Reserve Fund..... P225,000. \*\* Reduced 1895 from P3,000,000 to "C" 2,500,000 shares issued.  
 †† do voluntary P675,000. P1,200,000.  
 \* P2,584.83 carried to debit of P. & L. \* Gold Currency.  
 a/c 420/05.  
 ‡ Hongkong Currency.

"D" 1,000,000 .."  
 †† Reserve Fund..... P106,077.17.  
 †† do voluntary P165,667.86.  
 ‡‡ P14,083.03 carried to debit of new

## DEPARTMENT OF COMMERCE AND POLICE. BUREAU OF PORT WORKS.

# MANILA STEEL WHARVES.

### ADVERTISEMENT.

BUREAU OF PORT WORKS,

Manila, P. I., December 20, 1905.

Sealed proposals for the construction of TWO STEEL WHARVES in Manila Harbor will be received until 11 o'clock a. m., April 5, 1906, and then publicly opened.

Information furnished on application to this office or to the Bureau of Insular Affairs, Washington, D. C.

Plans may be seen at the above offices and also at the United States Engineer offices at Chicago, Ill., and San Francisco, Cal., and at the offices of "The Engineering News" and "The Engineering Record" at New York.

W. L. FISK,

Lieut. Col., Corps of Engineers, U. S. A.,

Director of Port Works, Philippine Islands.

### INSTRUCTIONS TO BIDDERS.

1. The contract, together with the plans and specifications, which form a part of it, which the bidder and the guarantors promise to enter into, may be obtained at this office or at the office of the Bureau of Insular Affairs, Washington, D. C.

Parties making bids are understood as accepting the terms and conditions contained in the contract.

2. The quantities stated herein, although estimated with as much accuracy as is possible, are only approximate, and the bidders, or their authorized agents, are expected to satisfy themselves by personal examination of the location of the proposed work, and by such other means as they may prefer, as to the accuracy of the estimated quantities and the difficulties attending the execution of the work, including the uncertainty of the weather and all other contingencies: They shall not at any time after the submission of a proposal lay claim against the Government of the Philippine Islands on account of any excess or deficiency, absolute or relative, in the estimate.

3. All proposals and guaranties must be made in triplicate upon the printed forms and the guaranty attached to each copy of the proposal.

One copy each of the advertisement, instructions for bidders, and specifications must be securely attached to each copy of the proposal and be considered as comprising a part of it.

Copies of the necessary forms may be had upon application in person or by mail to this office or to the Bureau of Insular Affairs, Washington, D. C.

4. Proposals and accompanying documents shall be securely sealed in an envelope plainly marked "Proposal for the construction of two steel wharves at Manila, P. I.," then placed in an outer envelope and addressed to "The Director of Port Works, Manila, P. I."

Proposals must be in the possession of the Director of Port Works before the hour appointed for opening the bids.

5. The guaranty accompanying each proposal must be signed by a surety company authorized by the Philippine Commission, or by two responsible guarantors to be certified as good and sufficient guarantors by a judge or clerk of a United States court, United States commissioner, or judge or clerk of any court of record in the Philippine Islands, with seal of said court attached.

6. A firm, as such, will not be accepted as surety, nor a partner for a copartner or firm of which he is a member.

Stockholders who are not officers of a corporation may be accepted as sureties for such corporations. Sureties, if individuals, must be citizens of the United States or residents of the Philippine Islands owing allegiance to the United States, or subjects or citizens of other Governments residing in the Philippine Islands, having sufficient property therein subject to execution to meet the obligation of the bond.

Any corporation incorporated under the laws of the United States or any State thereof authorized to become surety upon official bonds under the Acts of the Philippine Commission may be accepted as surety.

7. When the principal, a guarantor, or a surety is an individual, his signature to a guaranty or bond shall have affixed to it an adhesive seal. Corporate seals will be affixed by corporations, whether principals or sureties.

All signatures to proposals, guaranties, contracts, and bonds should be written out in full, and each signature to guaranties, contracts, and bonds should be attested by at least one witness, and, when practicable, by a separate witness to each signature.

8. Each guarantor will justify in the sum of forty thousand pesos, Philippine currency.

9. A proposal by a person who affixes to his signature the word "president," "secretary," "agent," or other designation, without disclosing his principal, is the proposal of the individual. That by a corporation should be signed with the name of the corporation, followed by the signature of the president, secretary, or other person authorized to bind it in the matter, who must file evidence of his authority to do so. That by a firm should be signed with the firm name, either by a member thereof or by its agent, giving names of all members of the firm.

Anyone signing the proposal as agent of another or others must file with it legal evidence of his authority to bind the firm.

10. The place of residence of every bidder and post-office address, with county and State or town and province, must be given after his signature.

11. All prices must be written as well as expressed in figures, and will be expressed in Philippine currency.

12. Proposals must be prepared without assistance from any person employed in or belonging to the military service of the United States or employed by the Bureau of Port Works, Manila, P. I.

13. All blank spaces in the proposal and bond must be filled in, and no changes shall be made in the phraseology of the proposal or addition to the items mentioned herein. Nor shall any conditions, limitations, or provisions be added thereto.

14. Alterations, by erasure or by interlineation, in filling in the proposal must be explained or noted over the signature of the bidder.

15. No bidder will be informed, directly or indirectly, of the name of any person intending to bid or not to bid, or to whom information in respect to proposals may have been given.

16. If a bidder wishes to withdraw his proposal, he may do so before the time fixed for the opening without prejudice to him, by communicating his purpose in writing to the officer who holds it, and, when reached, it will be handed to him or his authorized agent unread.

17. Reasonable grounds for supposing that any bidder is interested in more than one bid for the same item will cause the rejection of all bids in which he is interested.

18. No proposals received after the time set for opening of proposals will be considered.

19. Failure to comply with any of the conditions named herein will be sufficient ground for the rejection of the proposal.

20. The Government of the Philippine Islands reserves the right to reject any or all proposals and to waive any informality in the proposals received; also to disregard the proposal of any failing bidder or contractor known as such to the Director of Port Works.

21. The bidder to whom award is made will be required to enter into written contract with the Government of the Philippine Islands, with good and approved security in an amount of ten per centum of the amount of his bid, within twenty days after receiving notification of the acceptance of his proposal.

Blank forms of the contract may be seen at this office.

22. The sureties, if individuals, are to make and subscribe affidavits of justification on the back of the bond to the contract, and they must justify in an amount which shall aggregate double the amount of the penal sum named on the bond.

23. Bidders are invited to be present at the opening of the bids.

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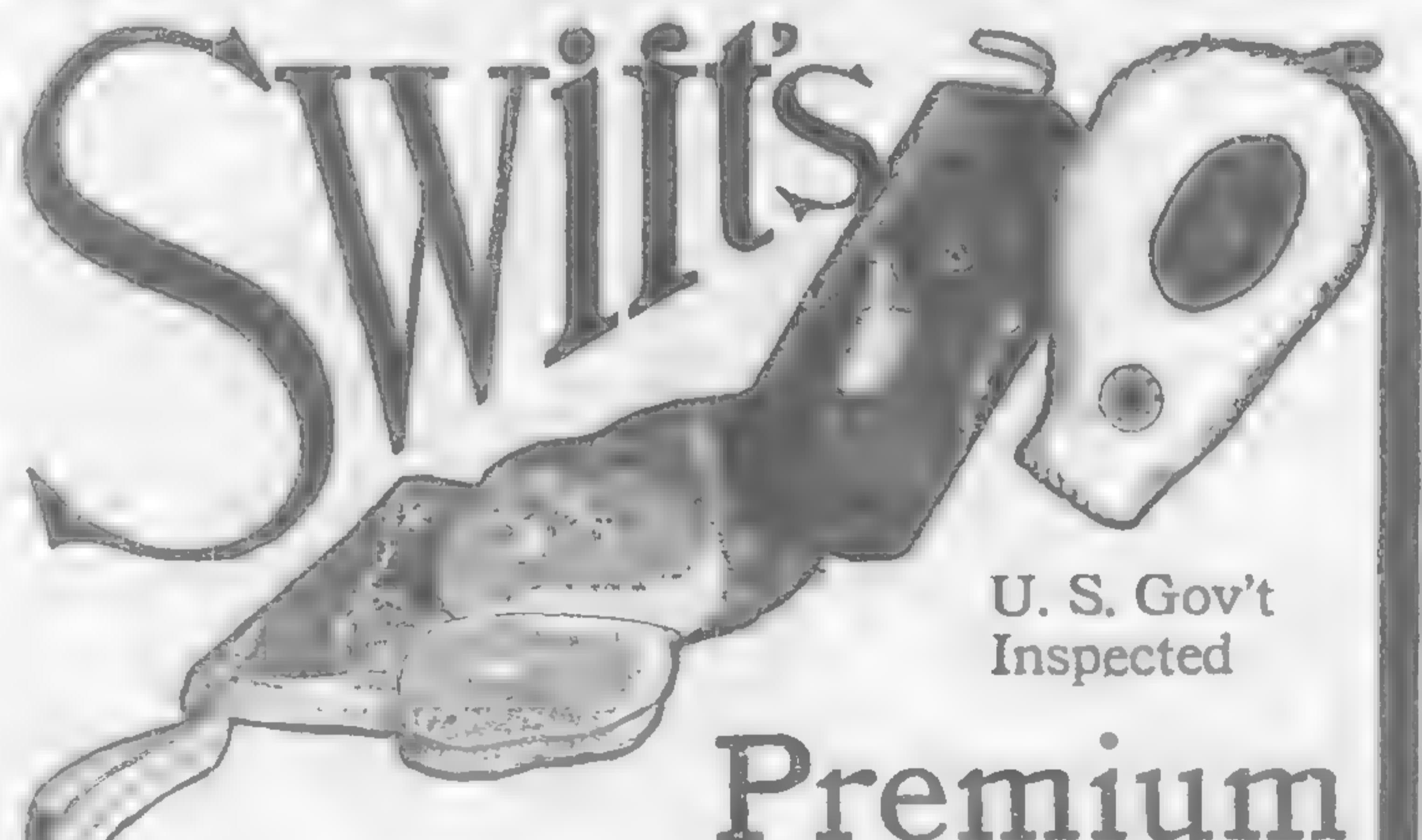
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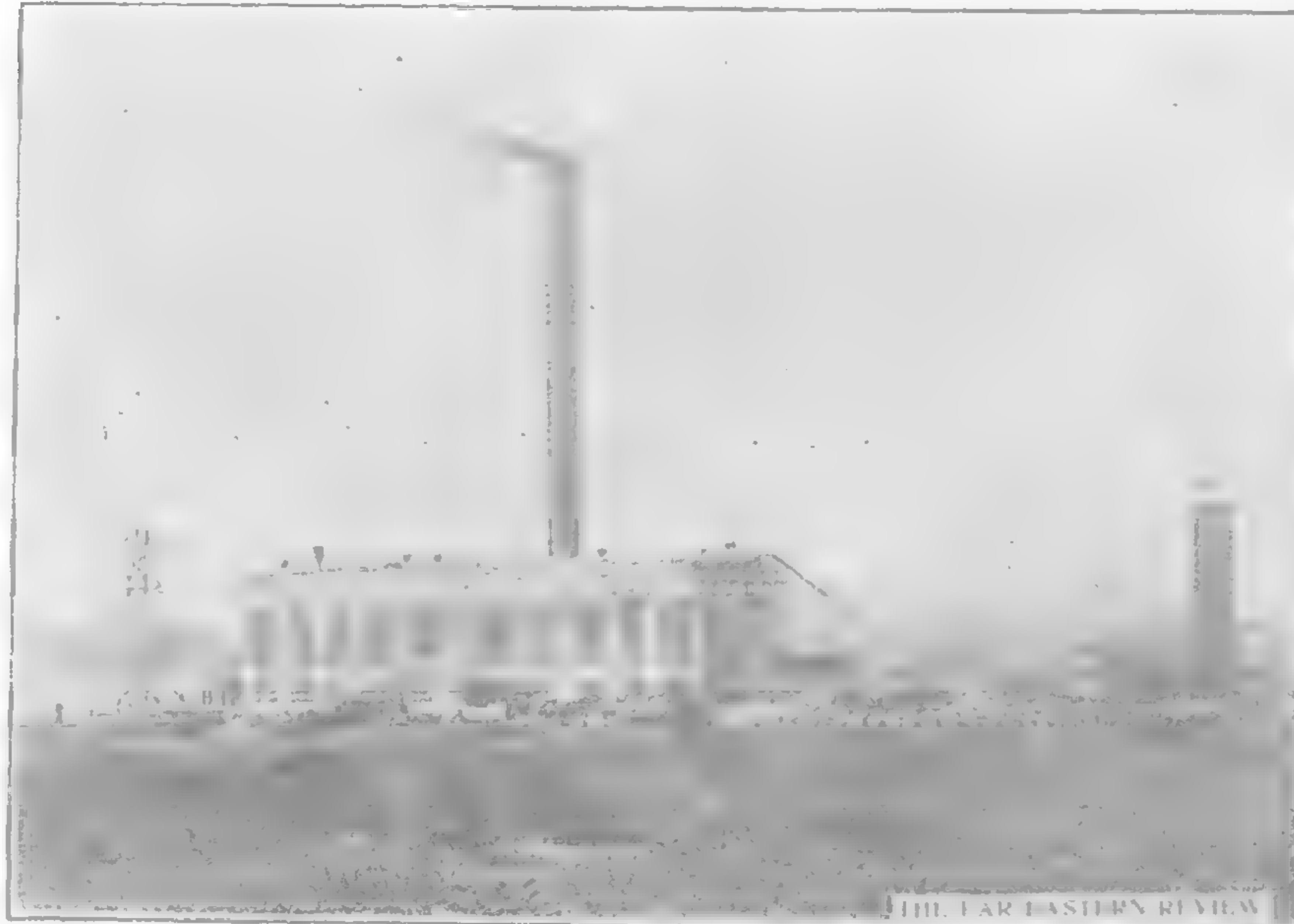
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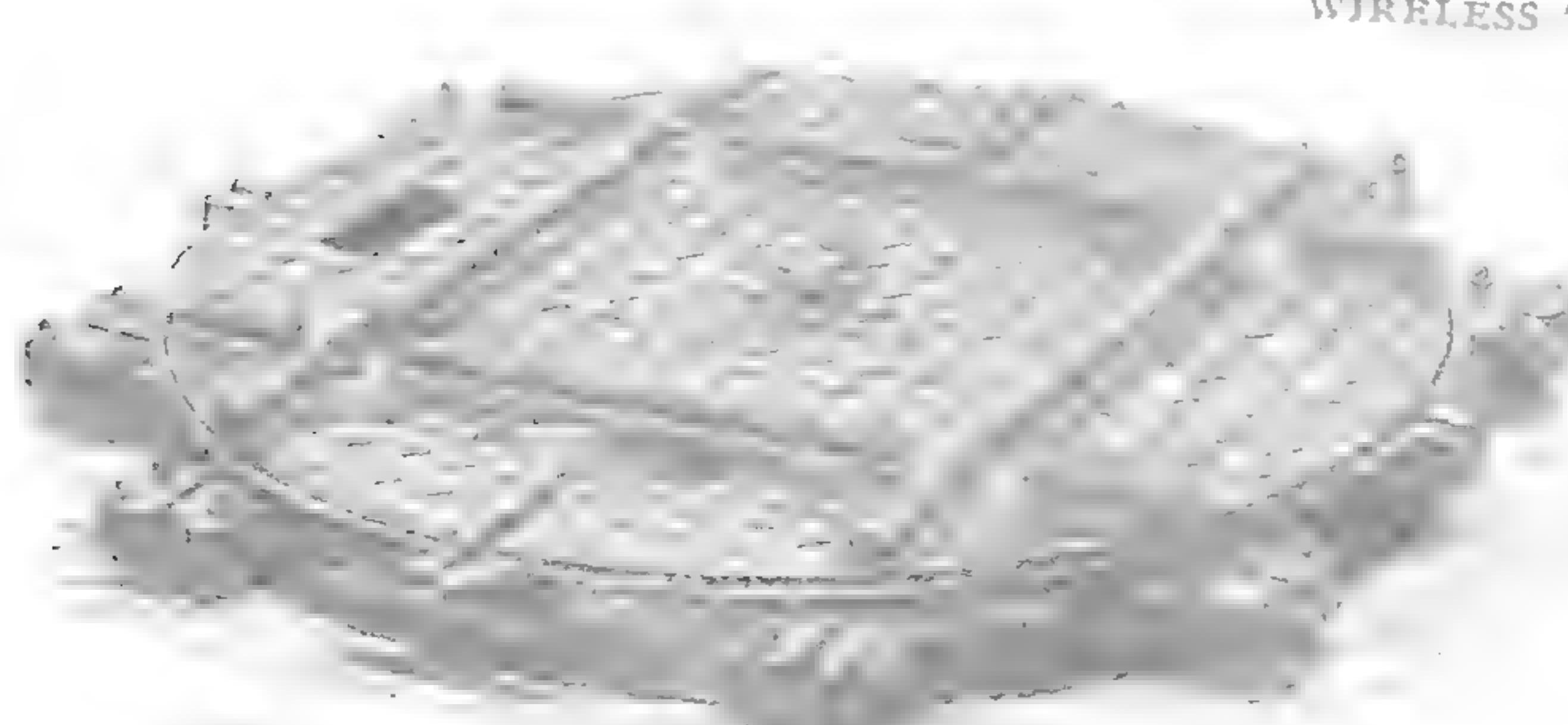
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The Canton-Hongkong  
Ice and Cold Storage Company, LimitedCAPITAL: \$700,000 HONGKONG CURRENCY  
70,000 SHARES AT \$10 EACH

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CHAN A FOOK.....	Hongkong	TSENG YUT KAI.....	Hongkong
C. W. MEAD.....	Shanghai	LAI HUI KWAN.....	Canton
KWONG KUT WOON .....			Canton

## OFFICERS:

A. F. CARRICK .....	President	CHAN A TAK .....	Secretary
CHAN A FOOK.....	Vice-President	TSENG YUT KAI .....	Treasurer

## LEGAL ADVISERS:

MESSRS. JOHNSON, STOKES &amp; MASTER

## BANKERS:

THE INTERNATIONAL BANKING CORPORATION

## OFFICES:

GENERAL MANAGERS—No. 2, Alexandra Building, Hongkong

GENERAL MANAGERS—No. 4a, Peking Road, Shanghai

REGISTERED—No. 31, Queen's Road, Hongkong

## ISSUE OF SHARES

It is intended to issue at present only a part of the authorized capital stock, namely, 30,000 shares, of which 7,600 shares have been subscribed and fully paid up, and the remaining 22,400 shares are now offered for public subscription. The present issue of shares will be payable as follows:

\$6 on application  
\$4 on Feb. 15, 1906

All subscriptions to be paid to the Company or their Bankers

## PROPERTY IN HAND

The Company owns two lots of land in excellent location and which have increased in value since their purchase; also one large steel lighter. The total value of this property is \$62,000.

## OBJECT OF COMPANY

To establish in the city of Canton an ice making plant of 50 tons daily capacity in ice, and also 30,000 gals. of distilled water.

## REASONS FOR ERECTING PLANT AT CANTON

(1). Canton has about two million inhabitants, and adjoining is a large foreign settlement with hotels and clubs.

(2). Canton is the terminus of the Sami Shui Railway now in operation, the proposed Canton-Hankow Railway and the Canton-Kowloon Railway. These railways will open up large districts adjacent to Canton and thus permit the Company to dispose of their ice to the many large towns not far distant from Canton.

(3). Some amount of ice is now furnished Canton daily from the plant at Hongkong; but owing to the local demands on the Hongkong plant they are only able to furnish an inconsiderable quantity as compared to the demand at Canton.

(4). Over 4,000 steamers enter the harbour yearly; all of which will require some quantity of ice.

(5). The temperature of Canton varies from 95 degrees in the summer to a minimum of 45 degrees in the two or three "cold" months while the general average during these "cold" months is about 60 degrees. Hence there is a steady demand for ice throughout the entire year.

(6). As the water at Canton is undrinkable, the Company proposes to furnish pure distilled water at a cheap price, and so bring it within the reach of the very poorest classes.

(7). There is no ice plant of any description at Canton, or at any nearer point than Hongkong, which will give this Company an undisputed control of all the enormous trade throughout the district.

The investor will readily perceive from the above the large demand for ice which exists at Canton, and that there is no supply to meet this demand. It will now be shown that given the demand and a modern up to date plant to meet the same, the opportunity is excellent for a good return on any investment.

## ESTIMATE OF PROFIT

(1). The total cost of operation will average per day, including all charges as labour, superintendence, fuel, supplies, interest, depreciation, and repairs, about \$250.

(2). The present established price of ice in this community is \$30 per ton wholesale rates.

(3). While the demand for ice will largely increase after the plant has been in operation a few months, the minimum sale of 15 tons per day has only been used in calculations since the Company has now the assurance of the immediate disposal of this amount.

(4). 15 tons daily, say 6,000 tons per year at \$30.... \$180,000.00  
Cost of Manufacture about \$250 per day..... 90,000.00

Clear profit..... \$90,000.00

or equals 30 per cent on the paid-up capital of.... \$300,000.00

It will be noted that the above does not include the very considerable profit to be made from the sale of 30,000 gals. of distilled water daily.

The contract for the erection of the plant has already been let to the Oriental Construction Company, the machinery has been ordered, work will soon be begun on the buildings and the plant will be in operation about May 1st, 1906.

ANY FURTHER INFORMATION, COMPLETE PROSPECTUS, BLANK APPLICATIONS, ETC.,

MAY BE HAD AT THE OFFICE OF THE COMPANY

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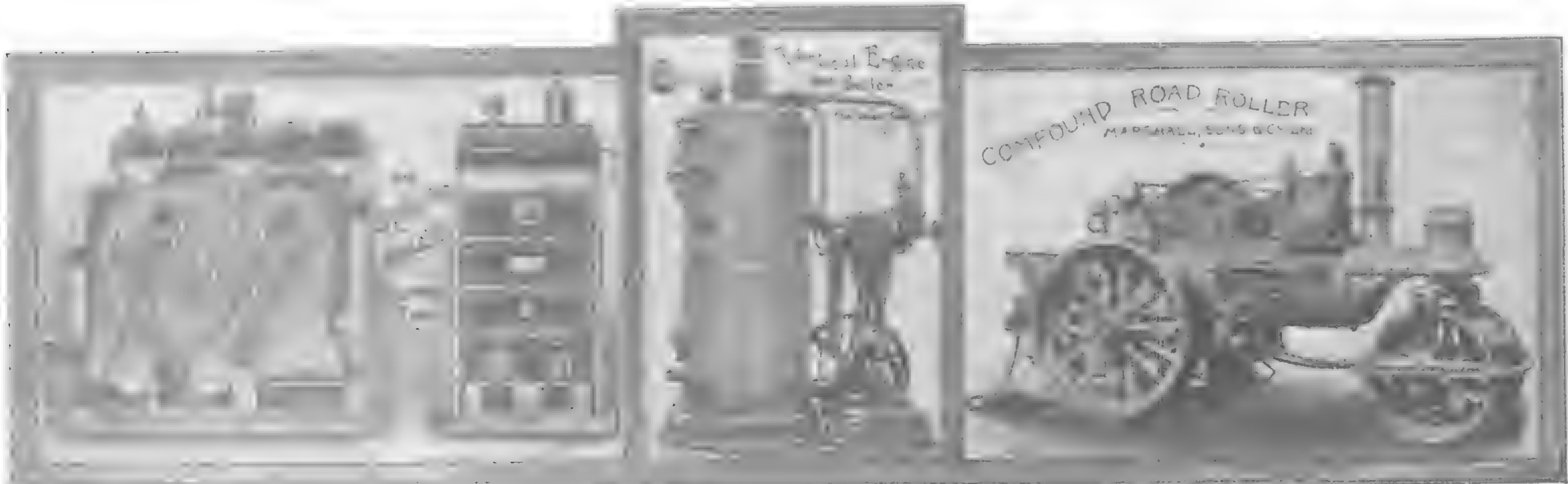
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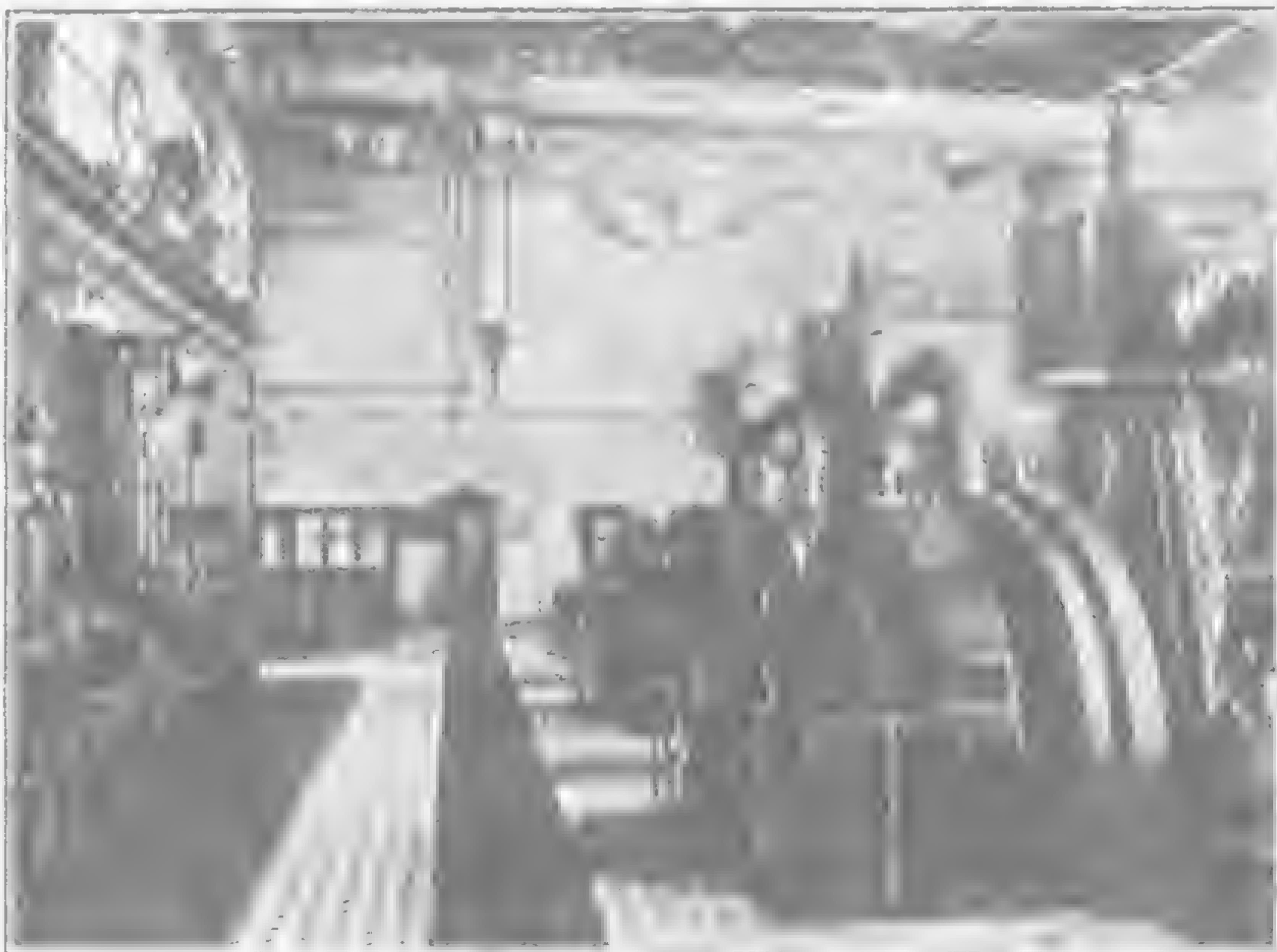
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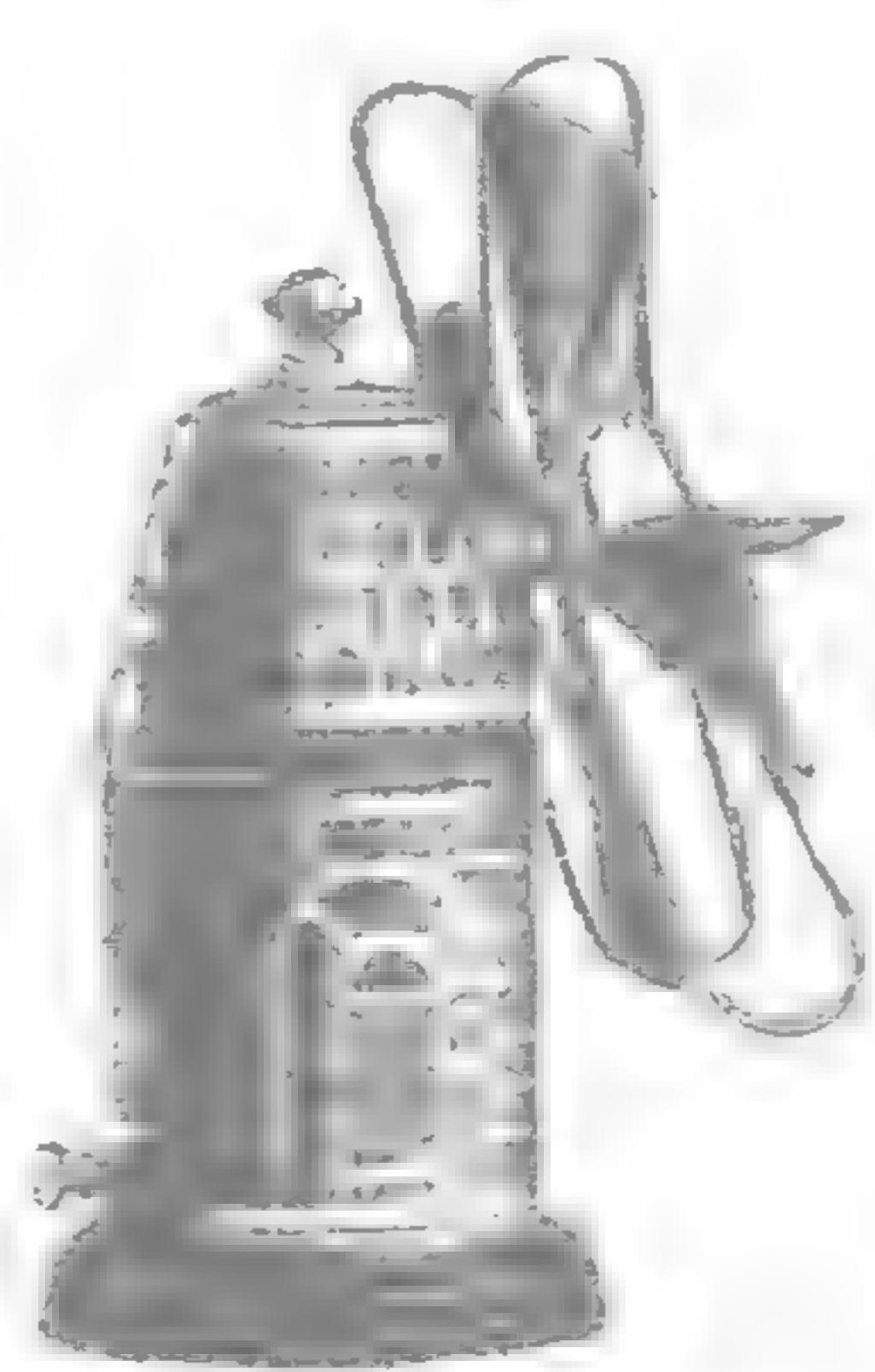
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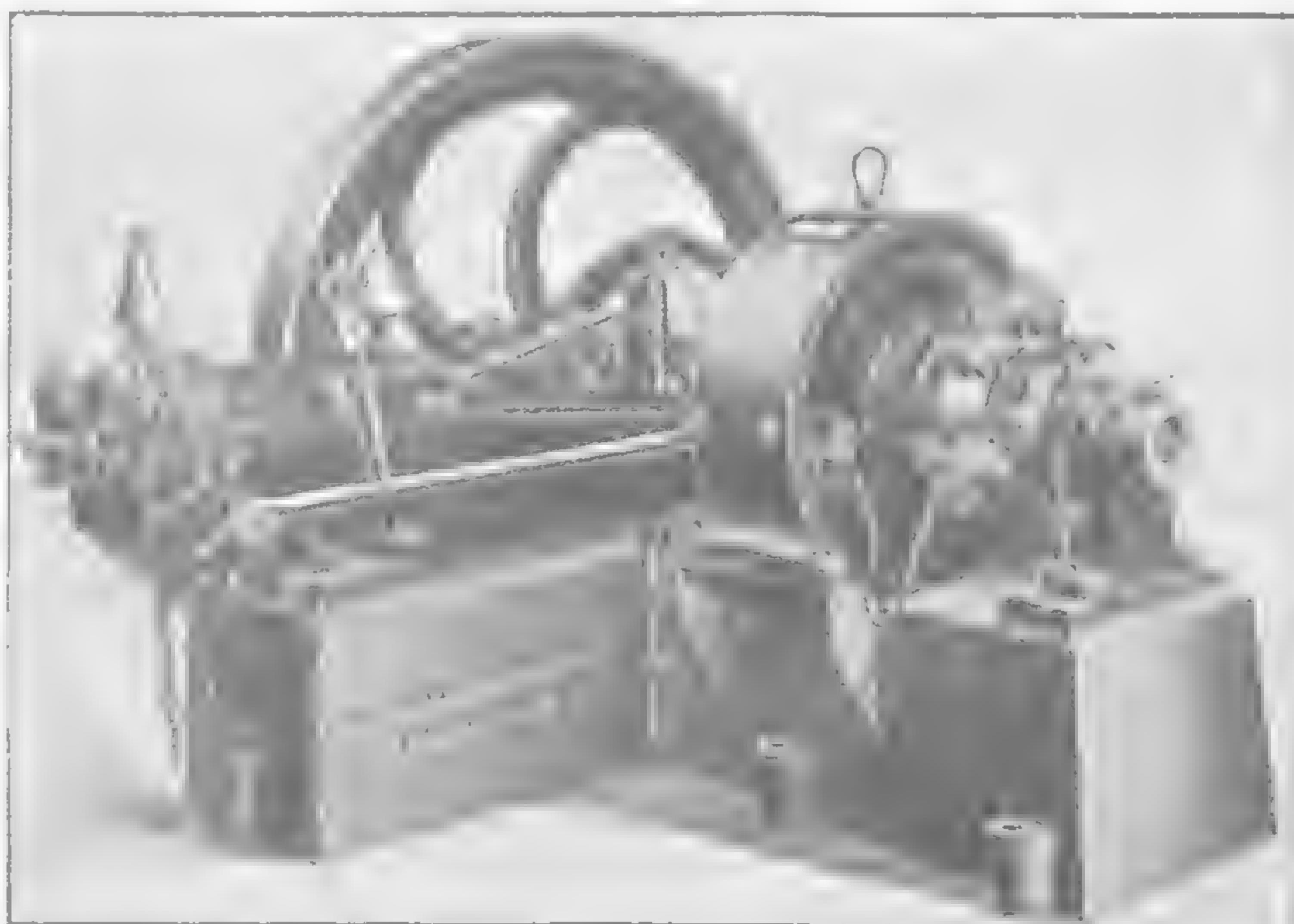
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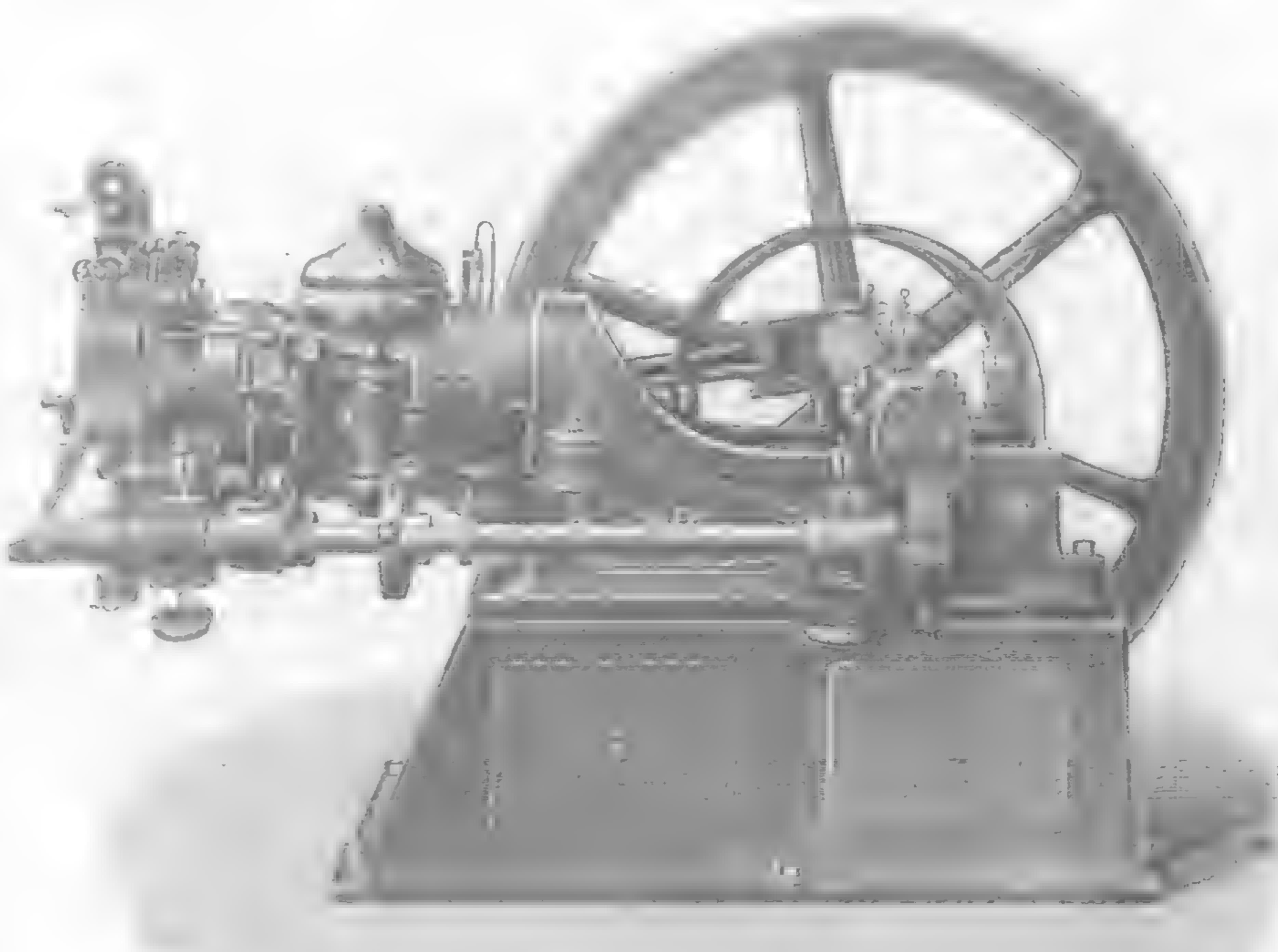
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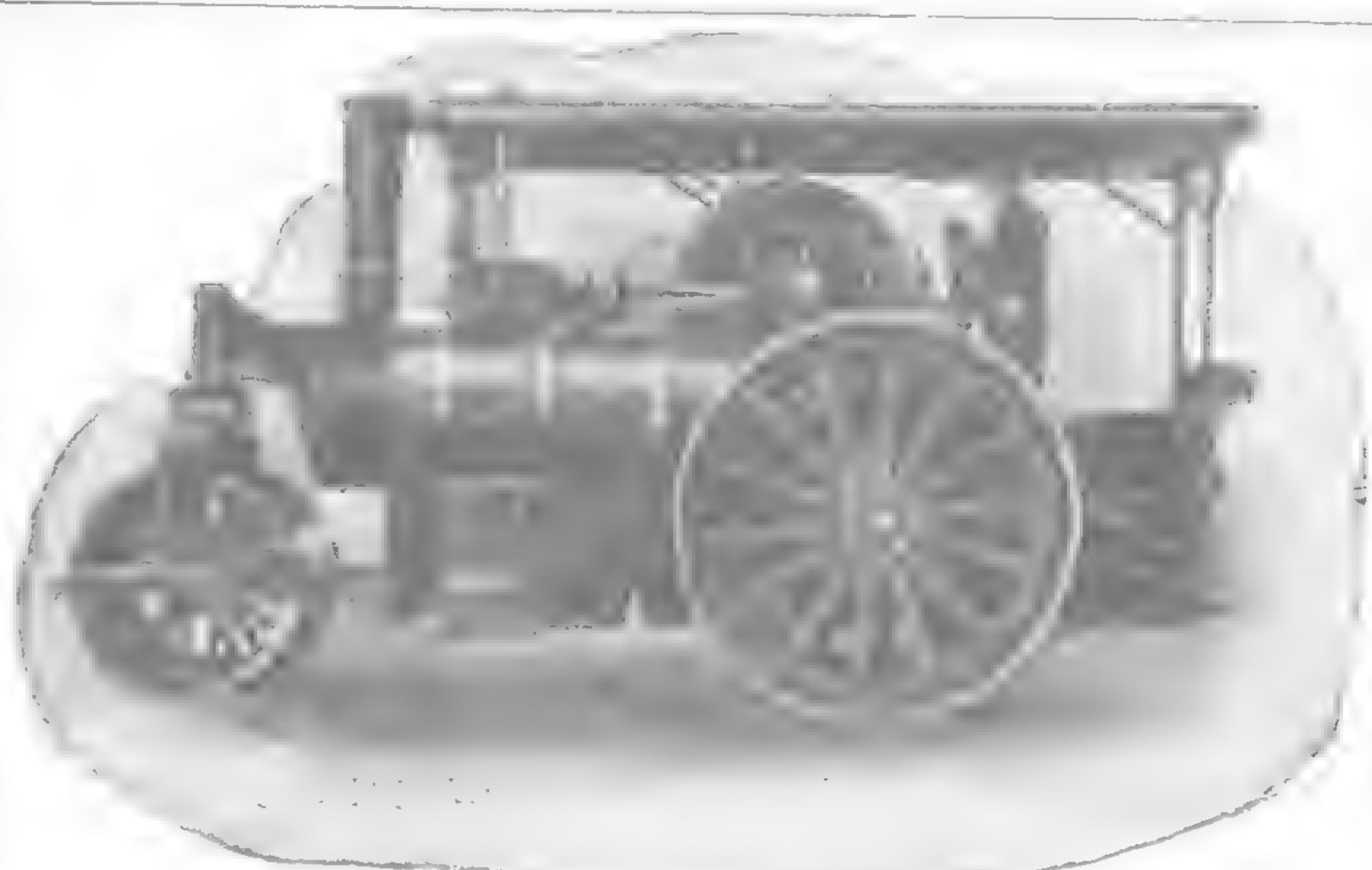
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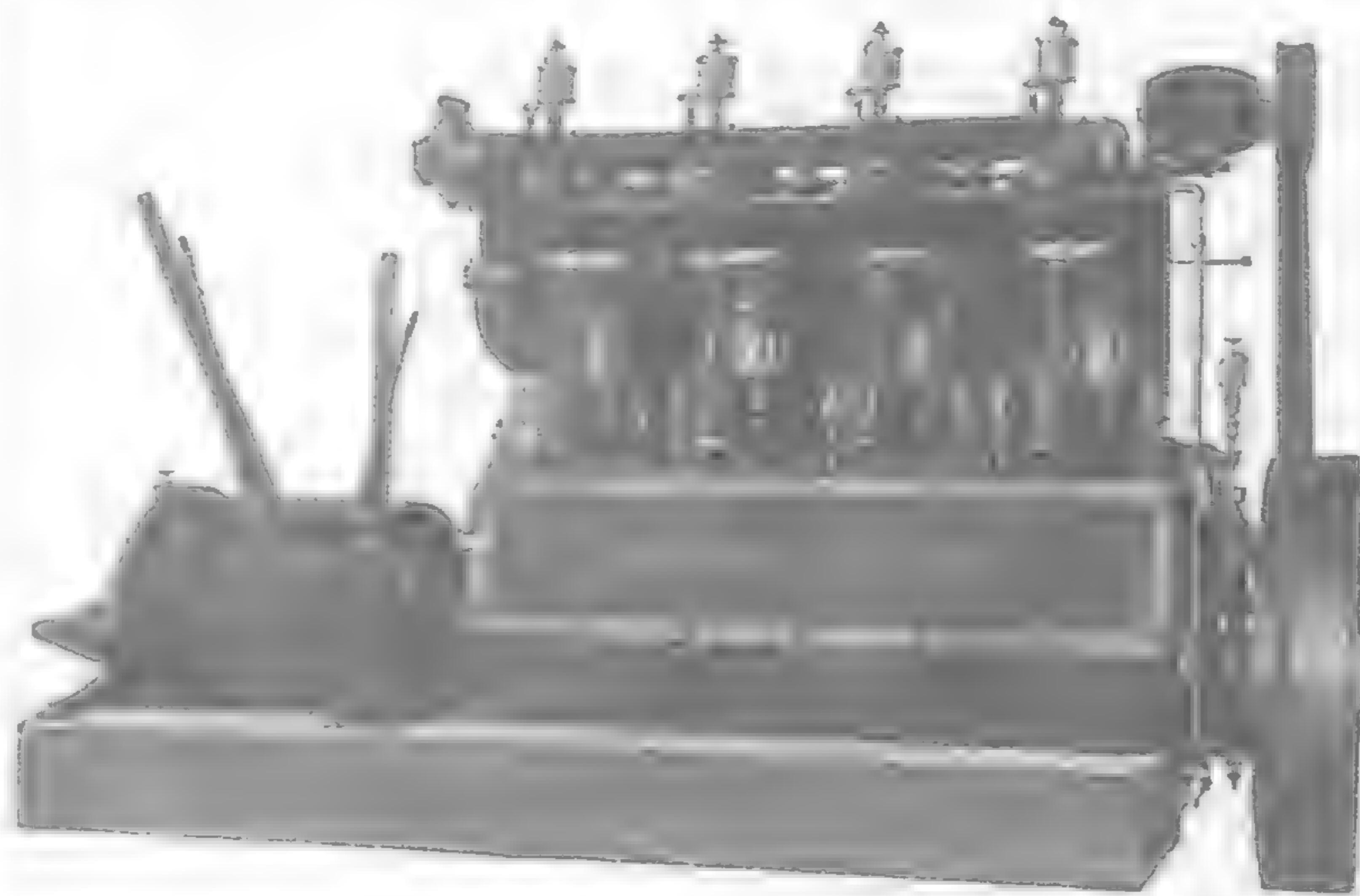
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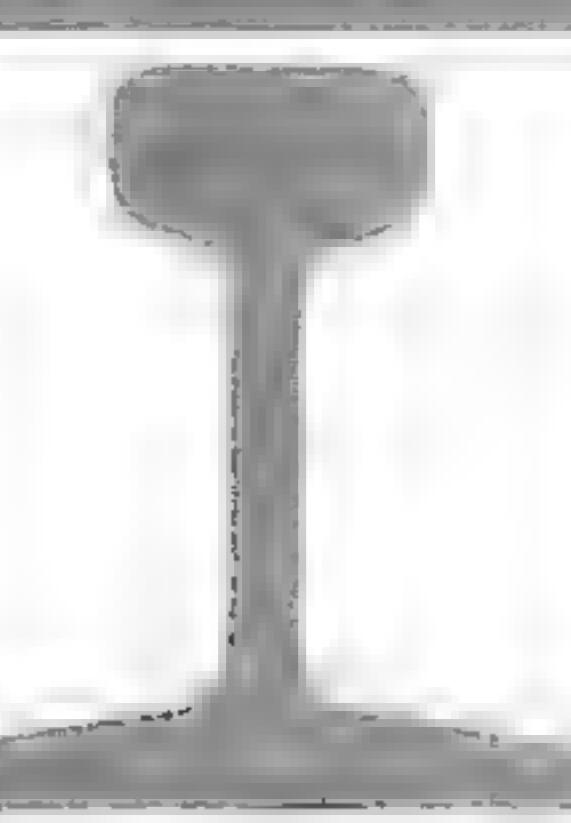
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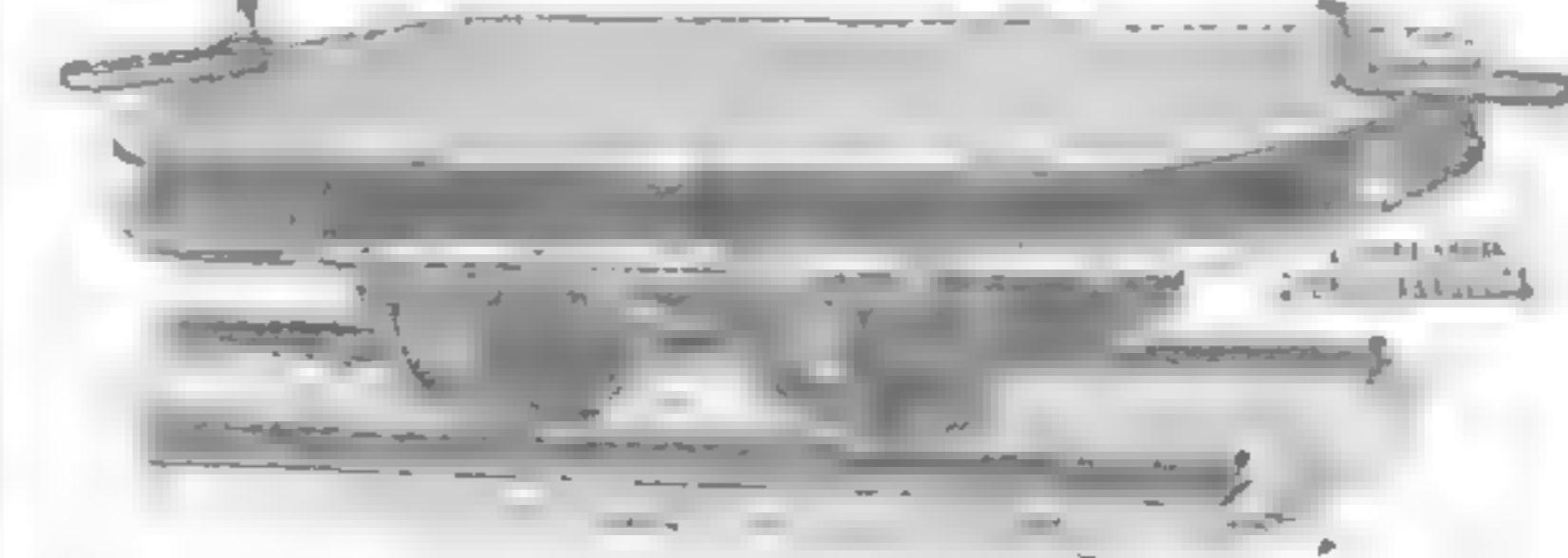
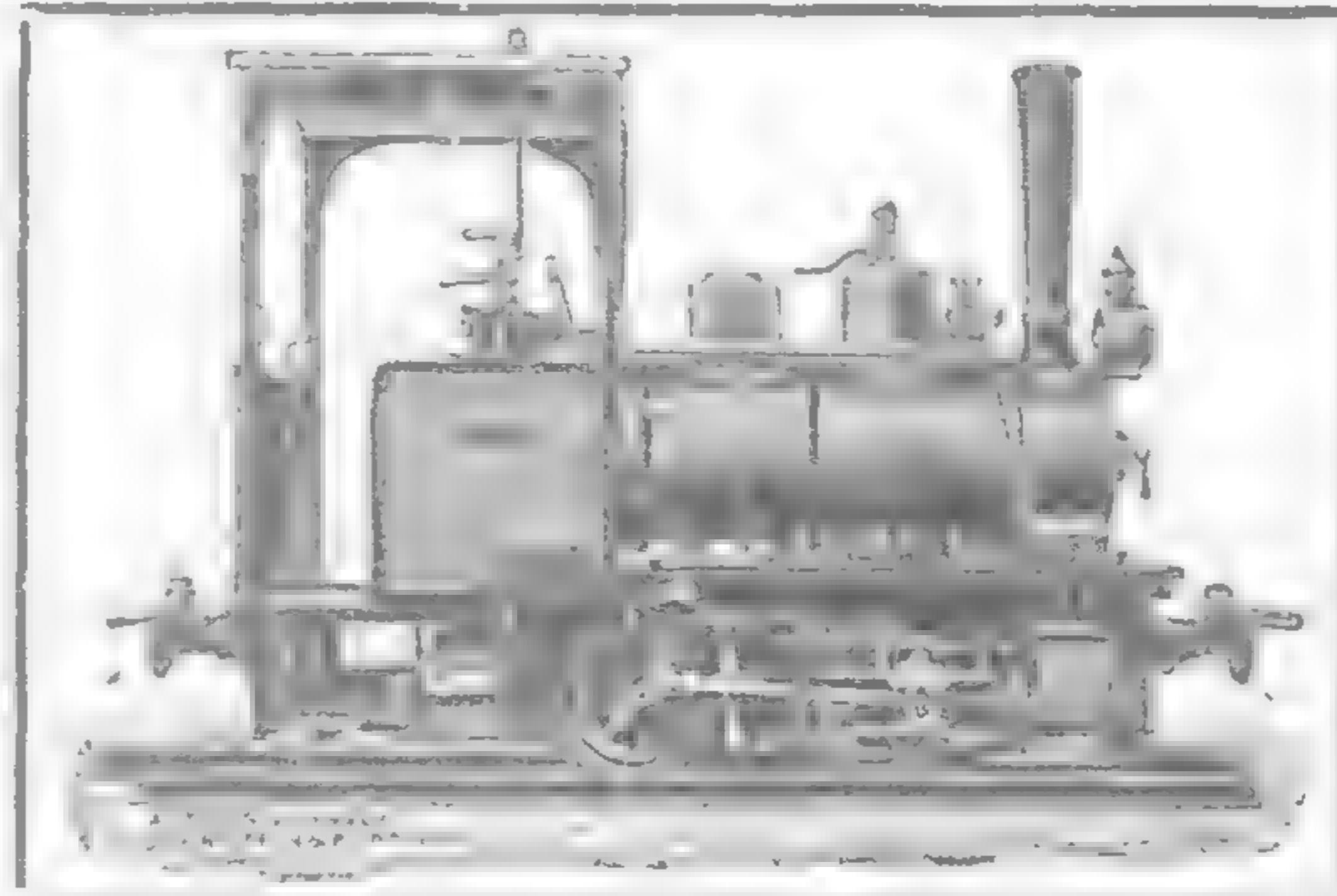
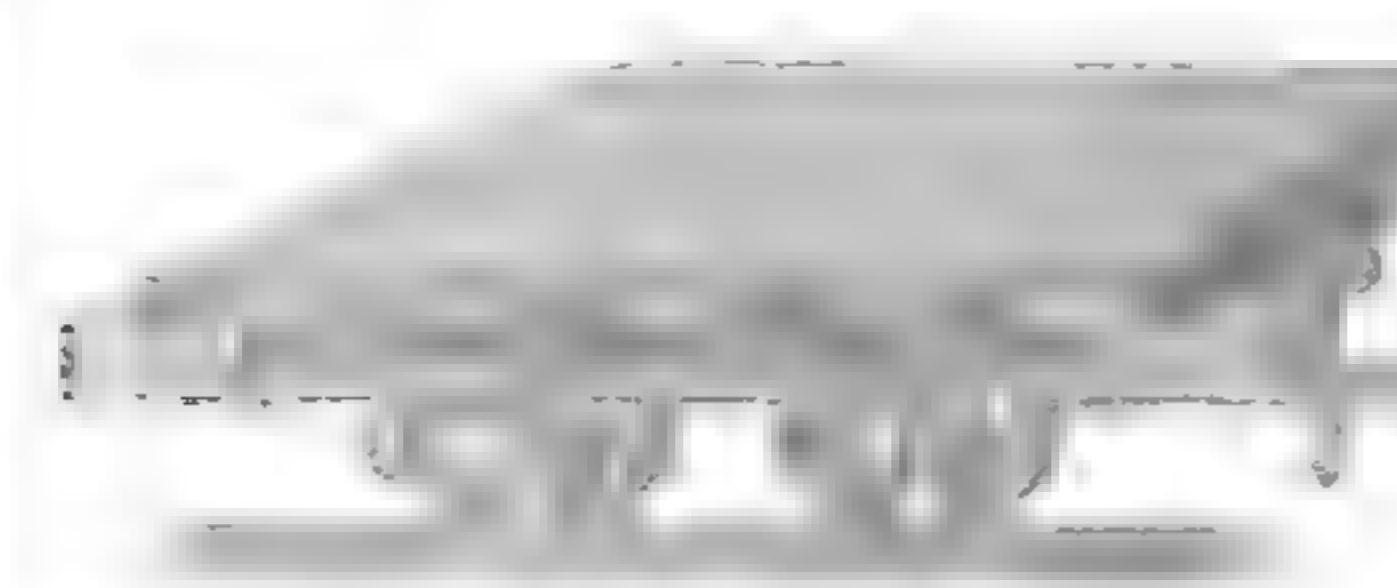
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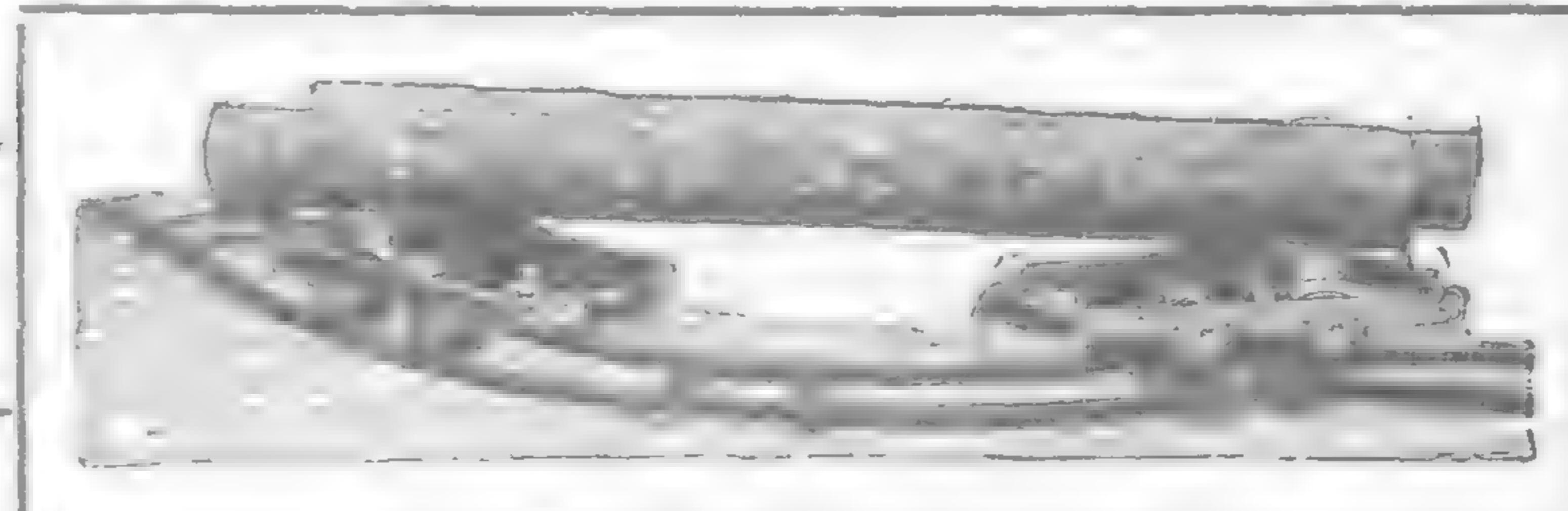
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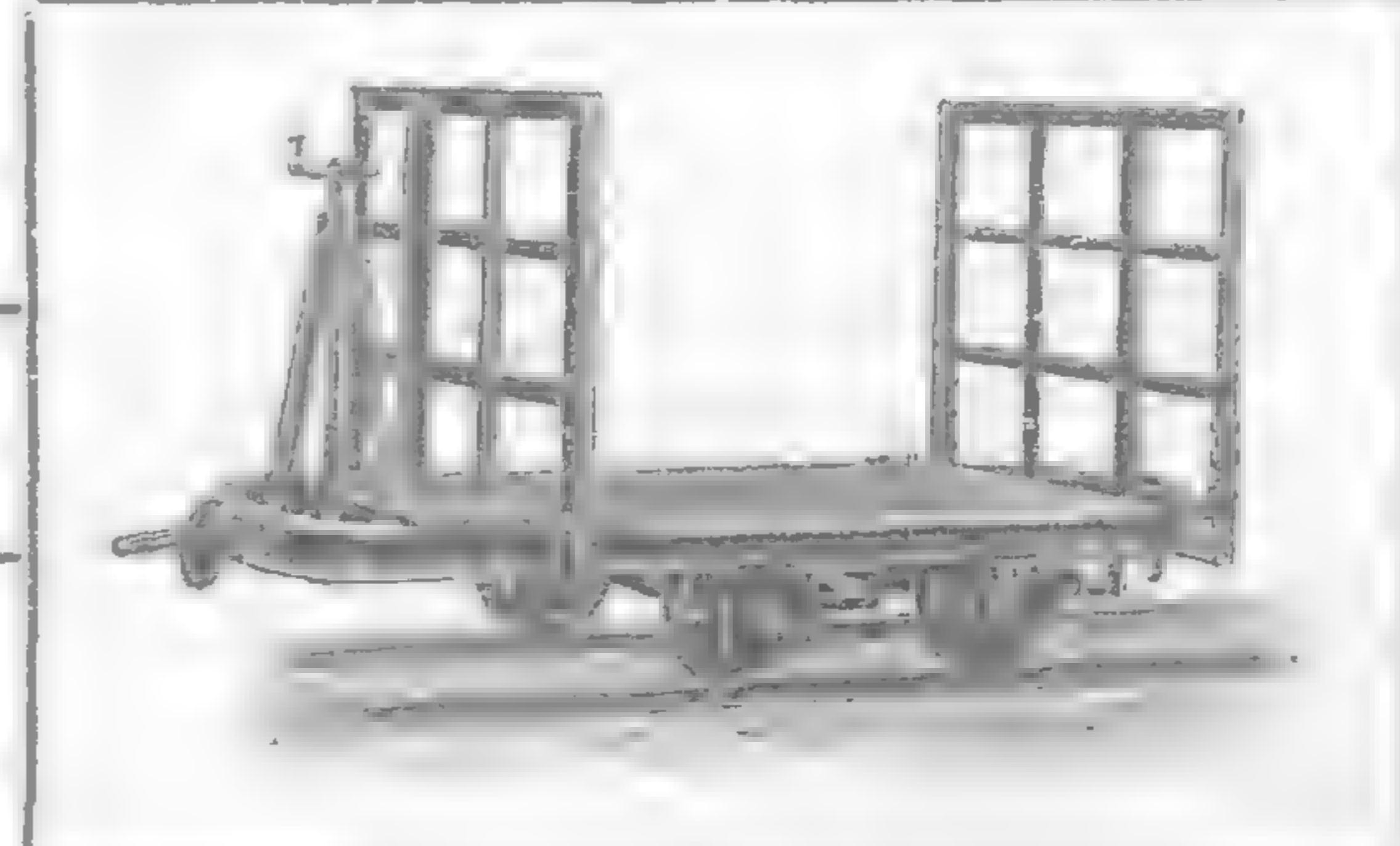
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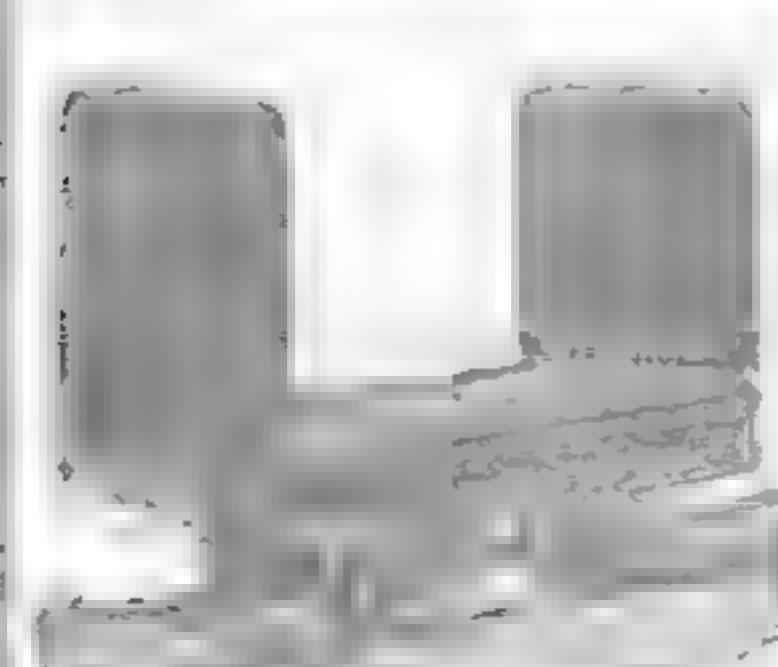
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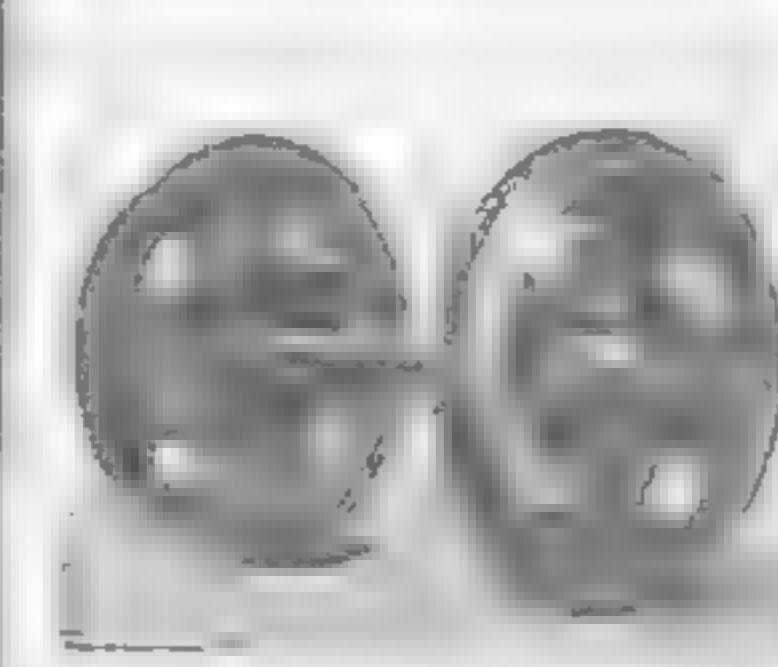


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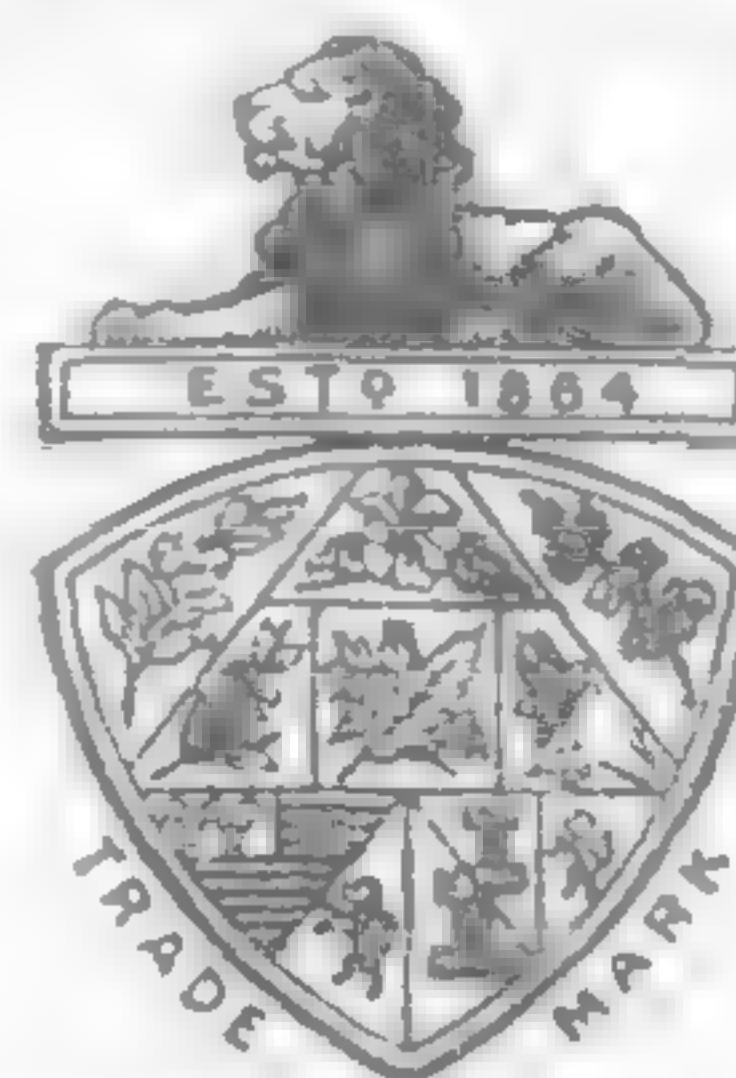
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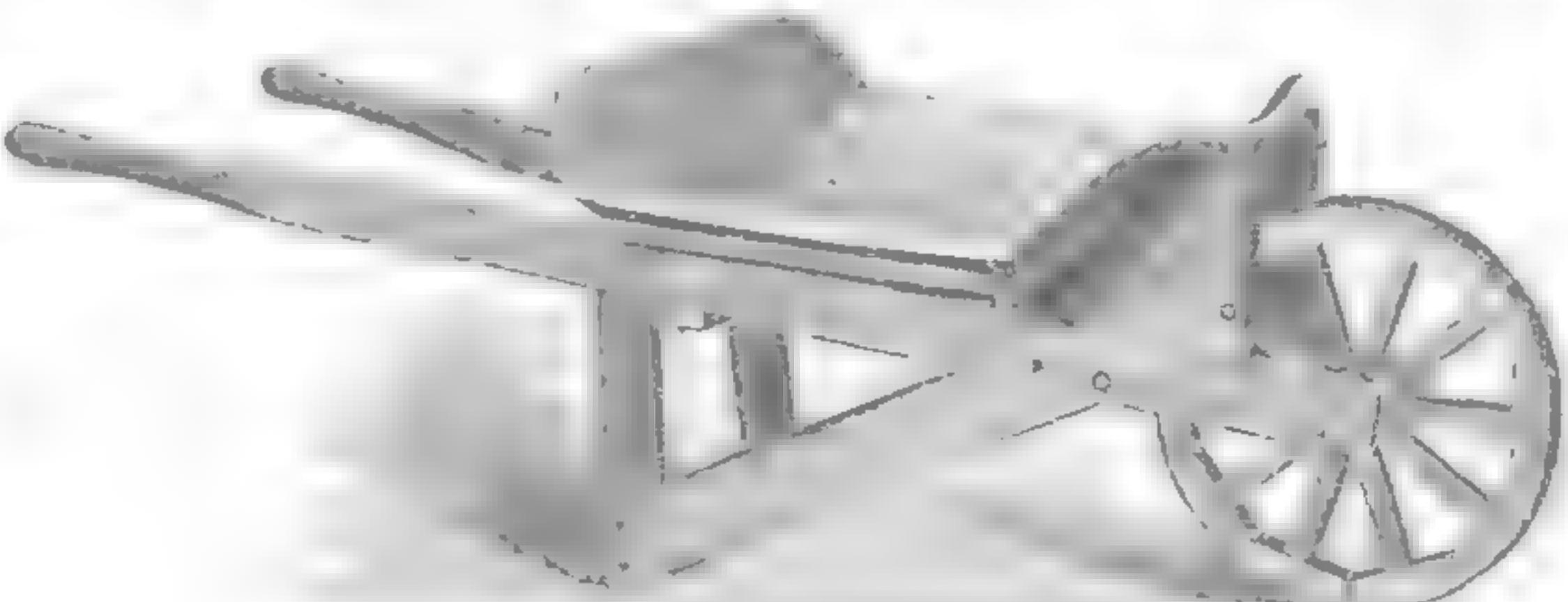
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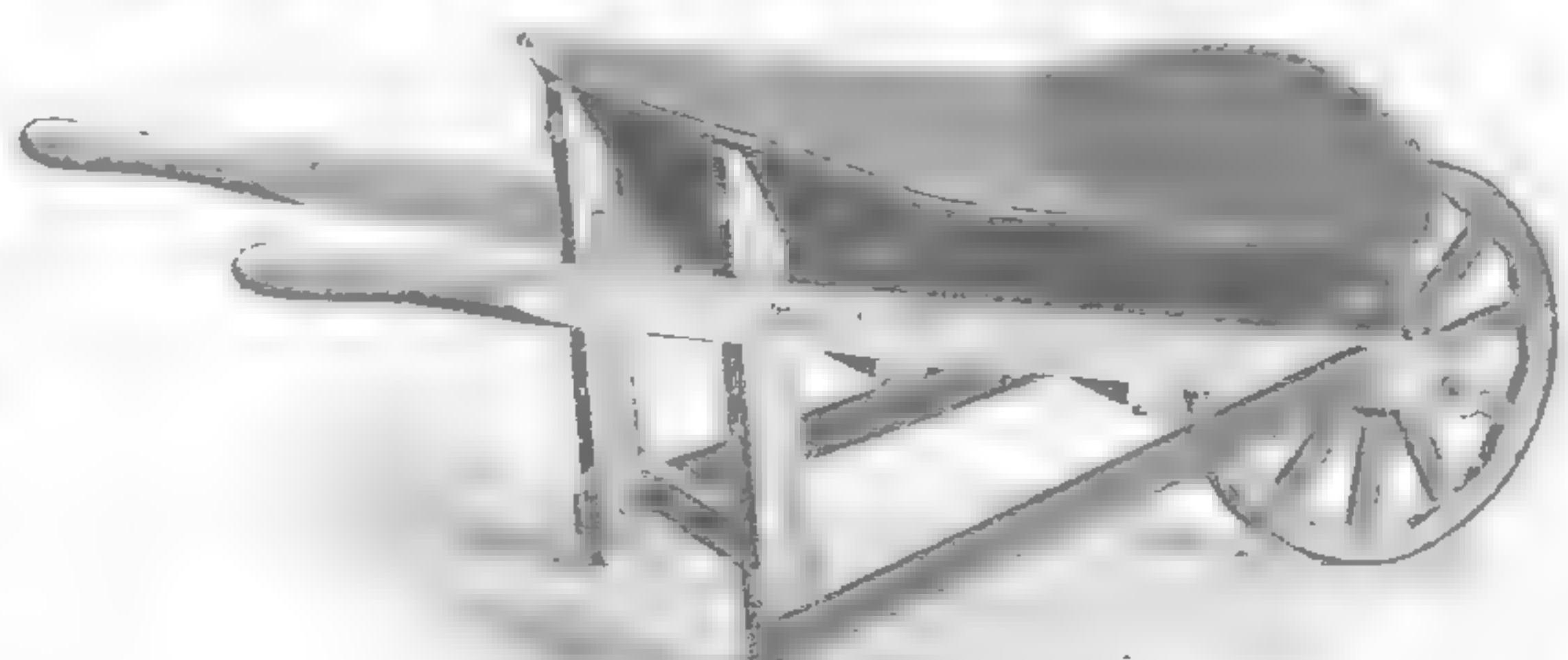
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VOL. I.

JANUARY 1, 1905

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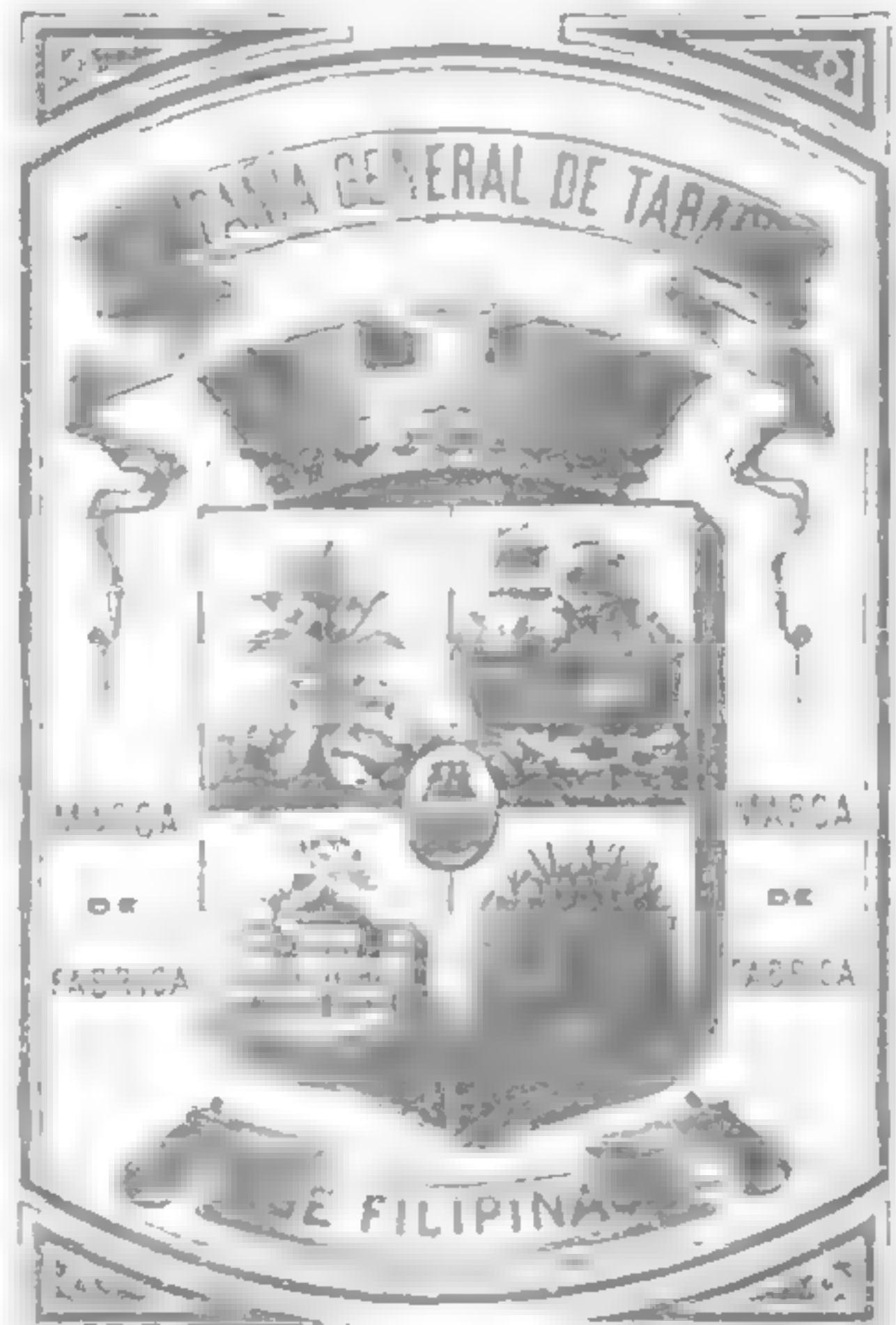
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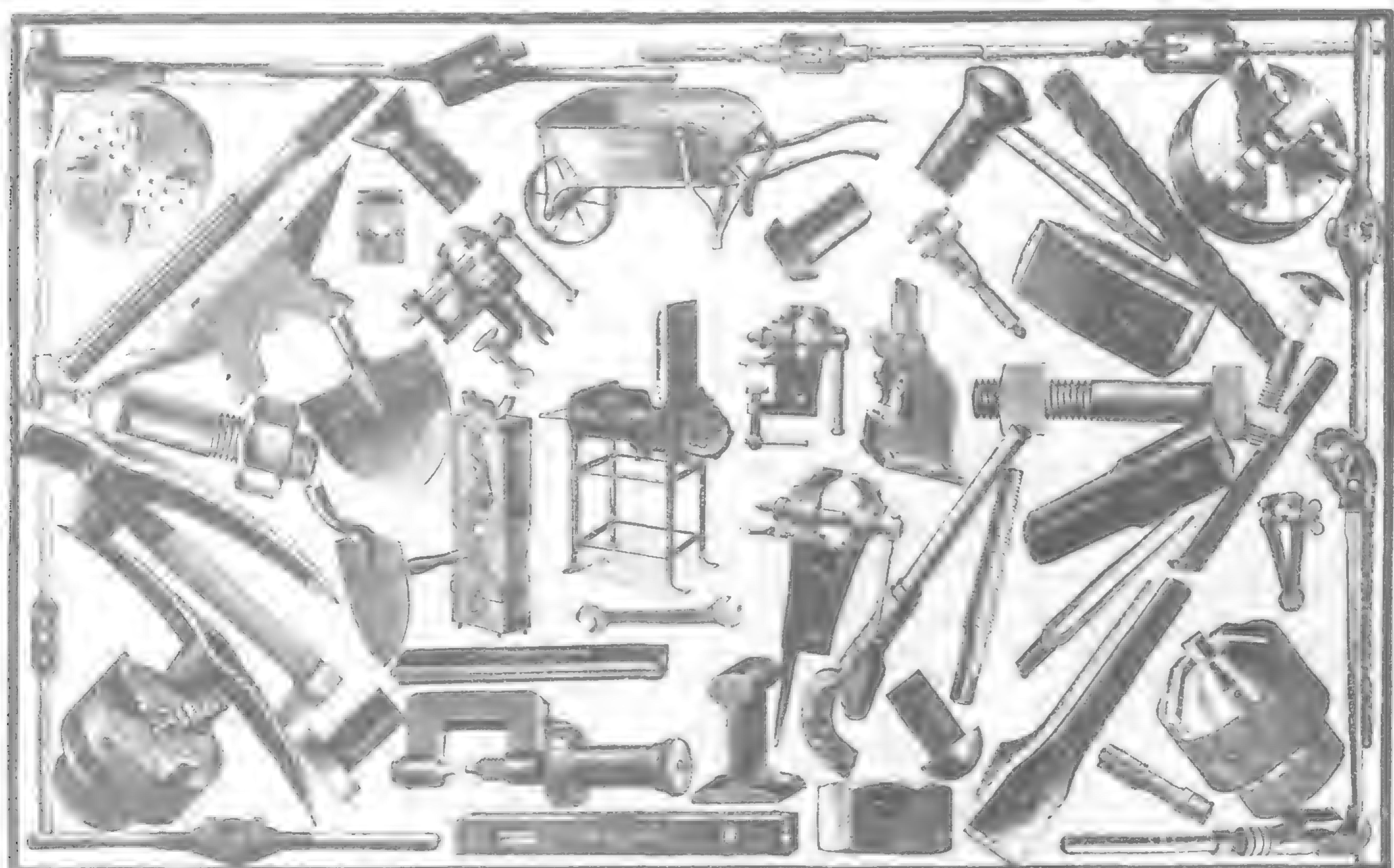
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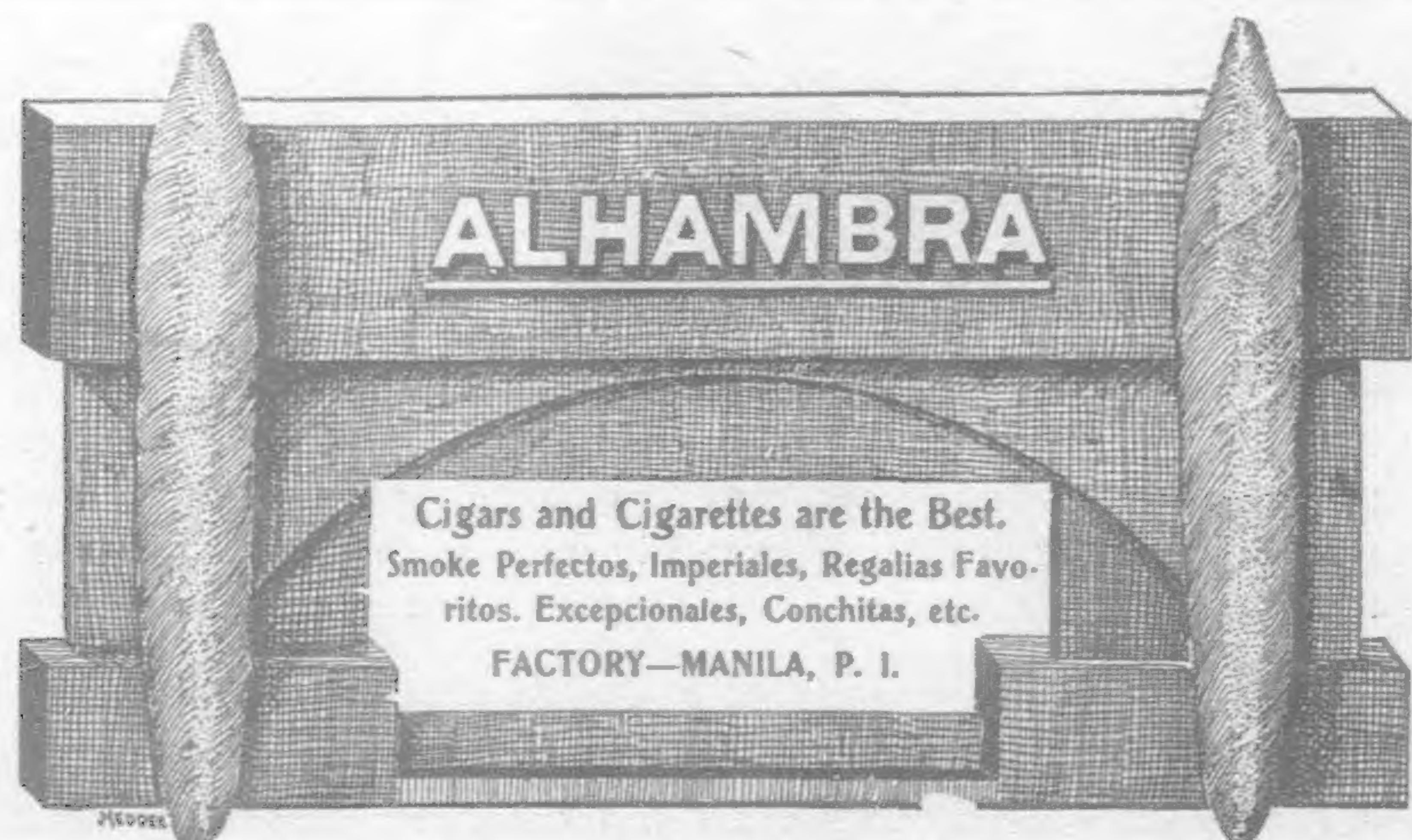
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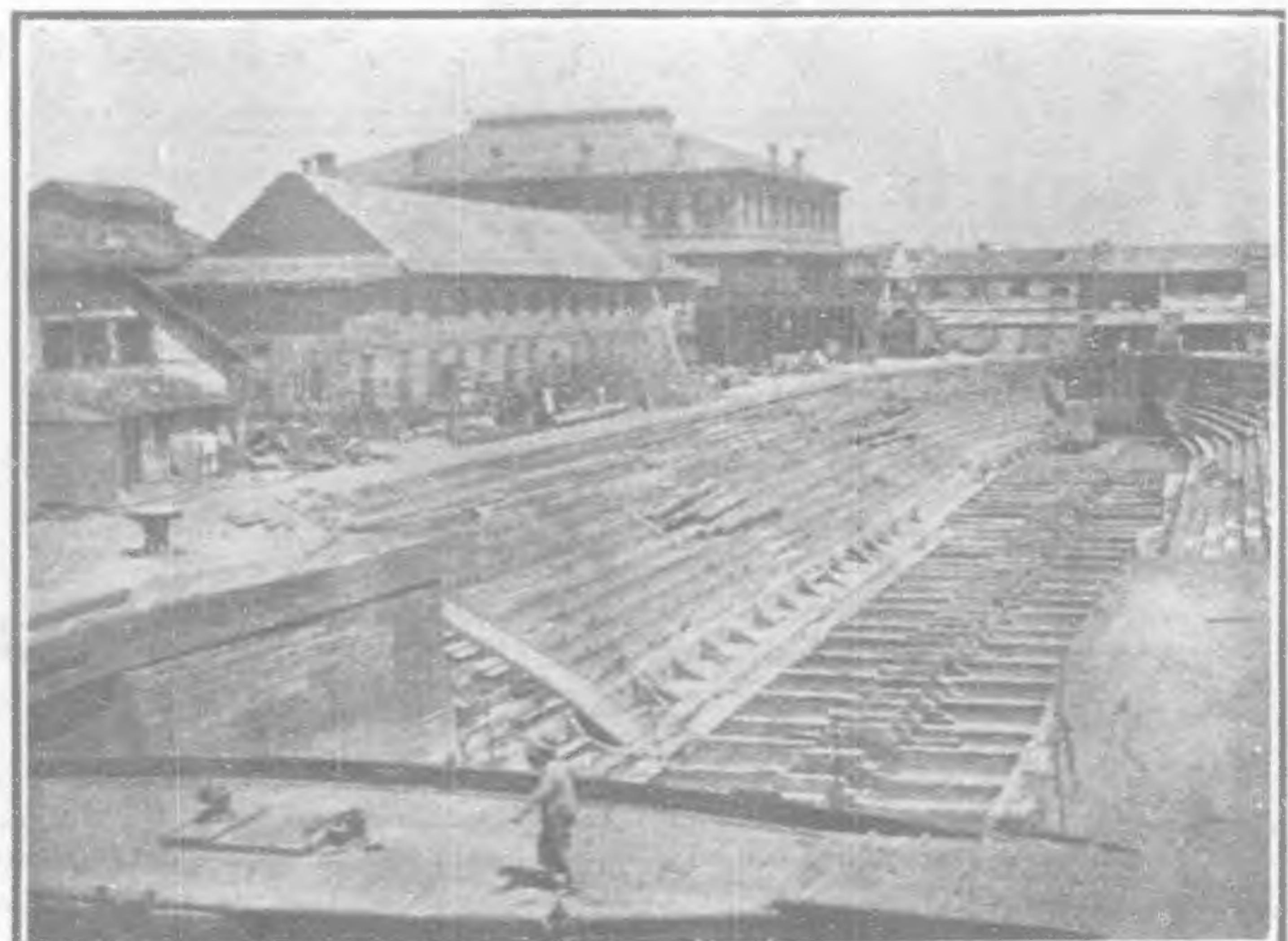
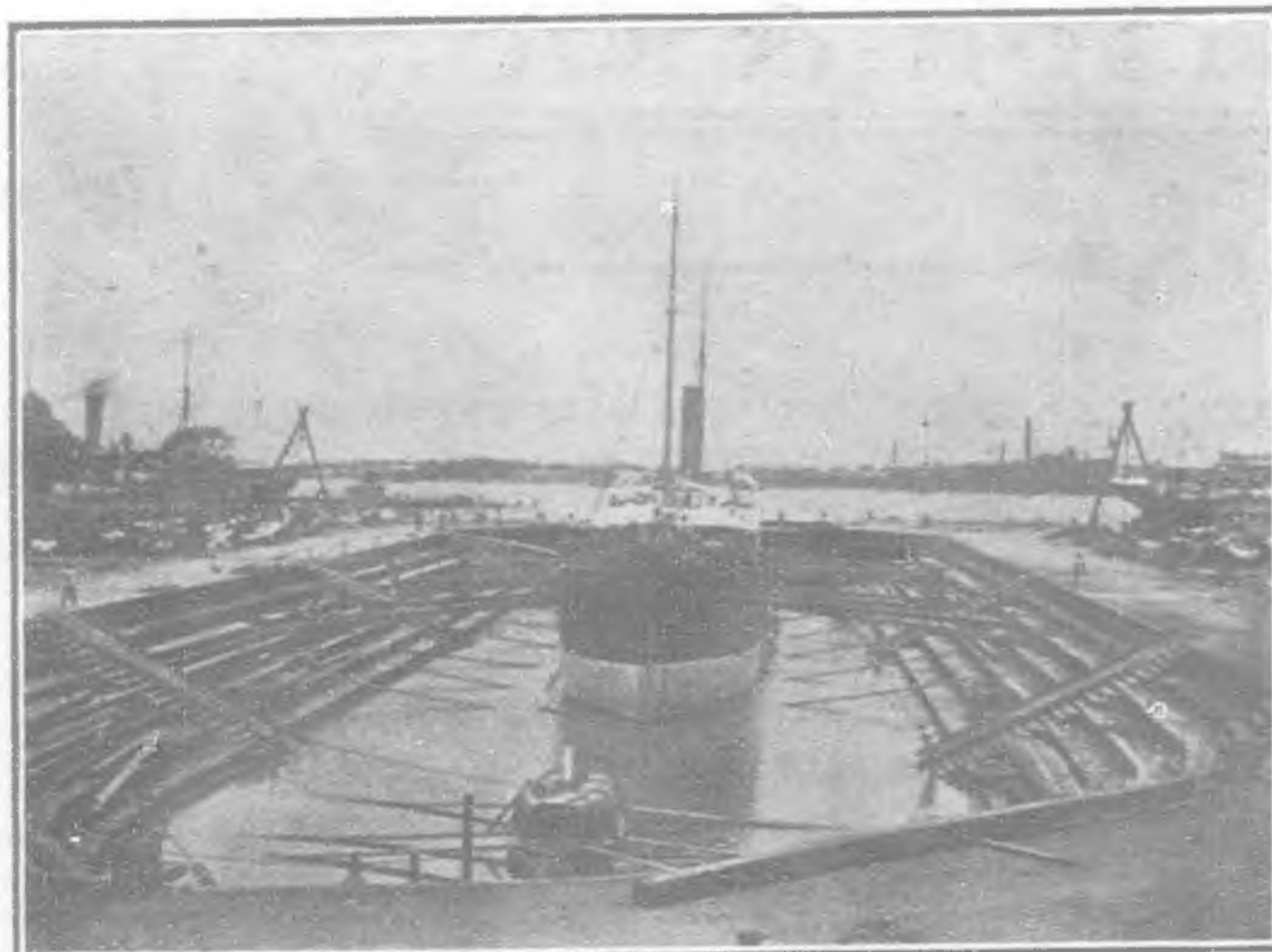
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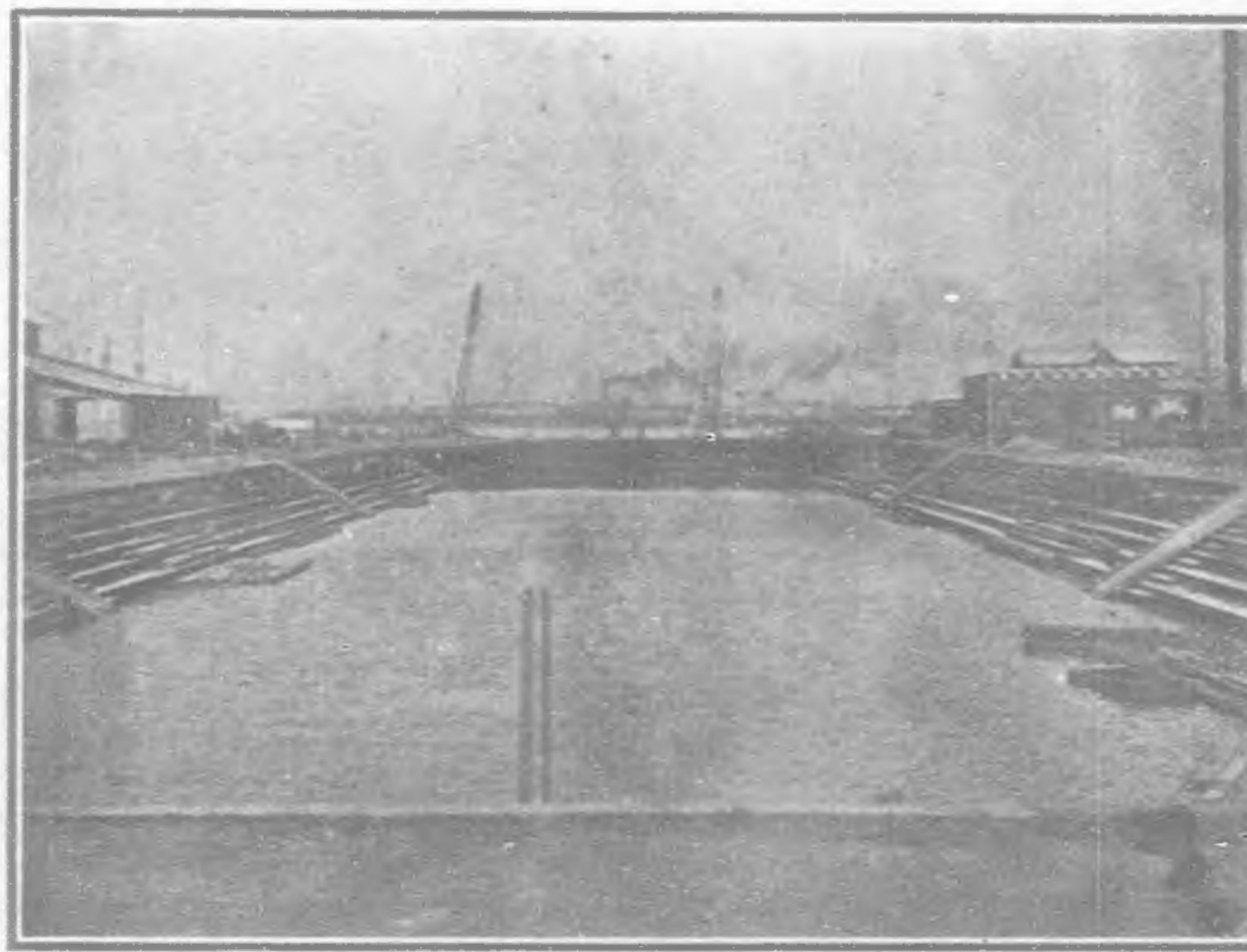
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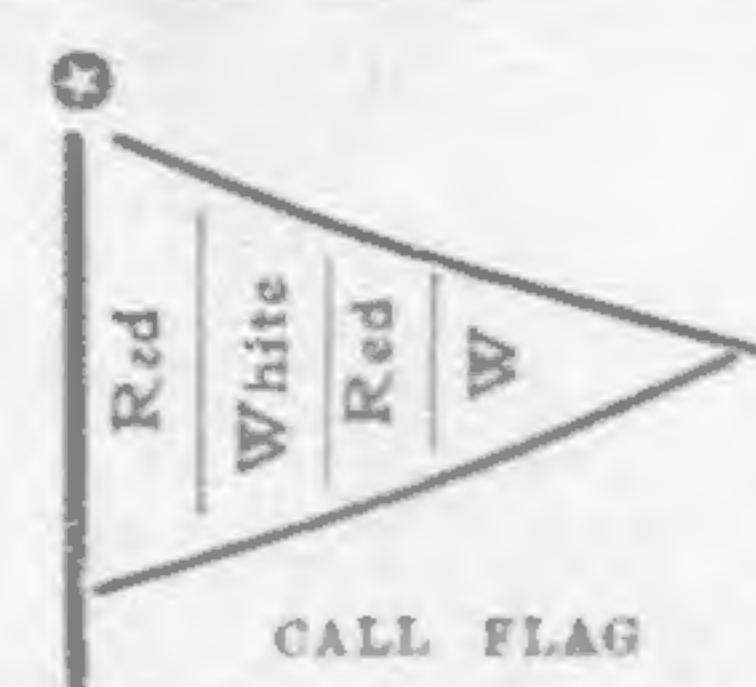
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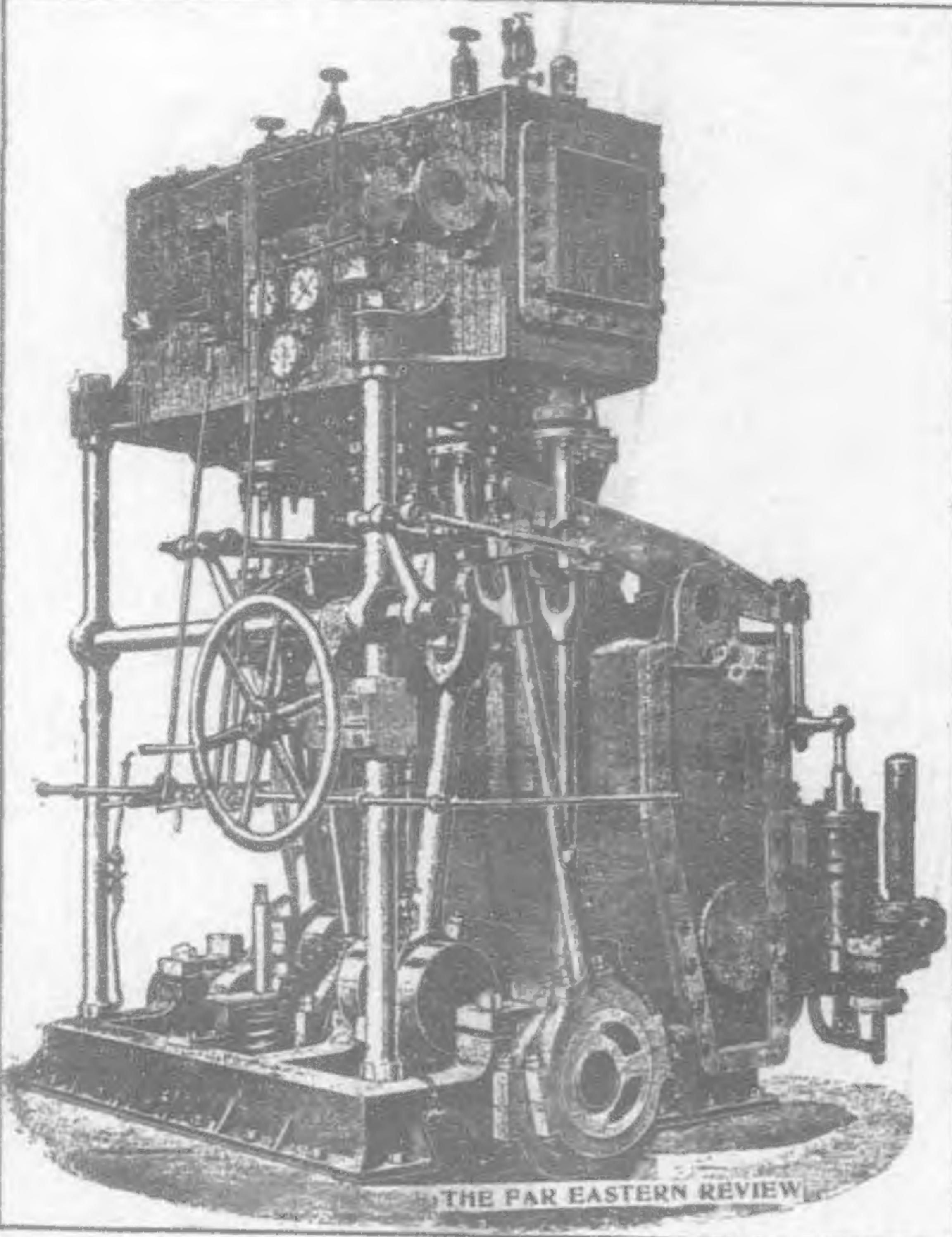
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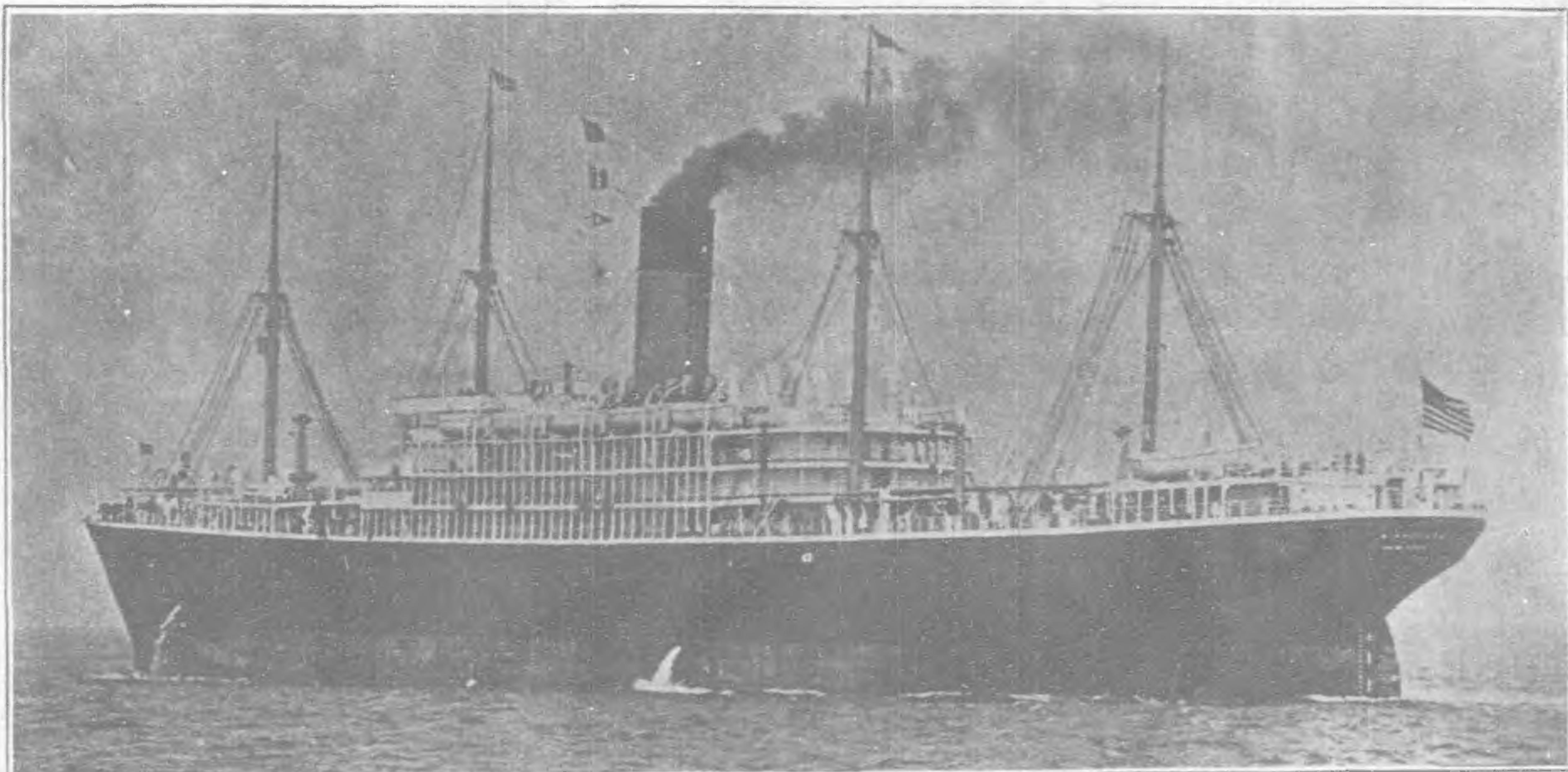
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